

**1999**

**YEAR BOOK  
AUSTRALIA**



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Australian Statistician

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# Preface

*Year Book Australia* is the principal reference work produced by Australian Bureau of Statistics (ABS). It provides a comprehensive statistical overview of various aspects of the economy and social conditions in Australia, together with their administrative and legislative background. In addition, it contains descriptive matter dealing with Australia's government, international relations, defence, geography and climate.

The first Official Year Book of the Commonwealth was published in 1908, although individual Australian States and colonies had been producing year books for several decades previously.

The statistics contained in this edition are the most recent available at the time of its preparation. More detailed and, in many cases, more recent statistics are available in the publications of the ABS and other organisations. The sources of information are shown throughout and at the end of chapters of the *Year Book*, while the *ABS Catalogue of Publications and Products* (1101.0) lists all current publications of the ABS.

ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued co-operation is very much appreciated. Particular thanks and appreciation are extended to those organisations which have kindly supplied material for inclusion in this 1999 edition of *Year Book Australia*.

Australian Bureau of Statistics  
Canberra  
February 1999

W. McLennan  
Australian Statistician





# Introduction

**Y**ear Book Australia provides a comprehensive overview of the economic and social conditions of contemporary Australia. It is a statistically oriented publication with sufficient background information to establish a context for the statistics and to assist in understanding and interpreting them.

Many of the statistics are derived from the ABS, the official statistical agency which produces the *Year Book*. However, a great deal of the information is also contributed by other, predominantly government, organisations. The official nature of the contributors to the *Year Book* ensures a high degree of objectivity and reliability in the picture presented of contemporary Australia.

The *Year Book* also presents some historical and international perspectives on Australia.

This current (81st) edition is the latest in a long series of Year Books extending back to the first edition in 1908. This series provides a valuable source of information on the state of Australia at any particular point in this period.

*Year Book Australia 1999* is also available on CD-ROM.

## Finding information

The contents pages at the beginning of the *Year Book* and preceding each chapter provide a guide to the broad subjects contained in each chapter. The index assists in locating information on more specific subjects. A list of Special Articles which have appeared in previous editions is contained at the end of the *Year Book*.

The tables and graphs in a chapter are numbered and the text is cross-referenced, as necessary, to the table or graph to which it relates.

## Further information

While the statistics and descriptive information contained in the *Year Book* provide a comprehensive overview of Australia, they represent only a relatively small part of the statistics and other information available. The *Year Book* is aimed primarily at providing a ready and convenient source of reference, both to those familiar and unfamiliar with a particular subject. In other words, because of the range of

subjects, and limitations on the size of the *Year Book*, it aims at breadth rather than depth of information.

For those requiring information in greater depth, the *Year Book* also serves as a directory to more detailed sources, with the source shown for each statistical table, graph and map. Where the ABS is the source, the title and catalogue number of the relevant publication are quoted. For other sources, the name of the organisation is shown, and the publication title where appropriate. Relevant ABS and other publications are also listed at the end of each chapter. A useful complementary publication is the *ABS Catalogue of Publications and Products* (1101.0) which lists all current publications and products of the ABS.

Year Books or Statistical Summaries produced by the ABS for States and Territories provide information similar to that contained in the *Year Book Australia*, for the State or Territory concerned.

In many cases, the ABS can also provide information which is not published or which is compiled from a variety of published and unpublished sources. Information of this kind may be obtained through the Information Consultancy Service. Charges are generally made for such information. Inquiries may be made by contacting the Inquiries area of the nearest ABS office (see page 762).

The annual reports of government departments and agencies also provide a valuable source of more detailed information on subjects covered in the *Year Book*.

For a variety of reasons, it is not possible for all statistics in the *Year Book* to relate to the latest or the same year. Readers wishing to obtain or clarify the latest available statistics should contact the relevant source.

## Comments from readers

The ABS endeavours to keep the balance of the contents of the *Year Book* in line with the ever-changing nature of the nation. For this reason comments on the adequacy and balance of the contents of the *Year Book* are welcomed and should be directed to the attention of the Editor of the Year Book, Australian Bureau of Statistics, PO Box 10, Belconnen ACT 2616.

## **Symbols and abbreviations**

The following symbols, where shown in columns of figures or elsewhere in tables, mean:

n.a.	not available
n.y.a	not yet available
—	nil or rounded to zero
..	not applicable
n.p.	not available for separate publication (but included in totals where applicable)
p	preliminary—figures or series subject to revision
r	figures or series revised since previous issue
n.e.i.	not elsewhere included
n.e.c.	not elsewhere classified
n.e.s.	not elsewhere specified
—	break in continuity of series (where drawn across a column between two consecutive figures)
*	subject to high standard errors and should be used with caution
\$m	\$ million
\$b	\$ billion (thousand million)

The following abbreviations are used for the titles of the Australian States and Territories and Australia:

NSW	New South Wales
Vic.	Victoria
Qld	Queensland
WA	Western Australia
SA	South Australia
Tas.	Tasmania
NT	Northern Territory
ACT	Australian Capital Territory
Aust.	Australia

Yearly periods shown, for example, as 1996, refer to the year ended 31 December 1996; those shown, for example, as 1996–97, refer to the year ended 30 June 1997. Other yearly periods are specifically indicated. The range of years shown in the table headings, for example, 1901 to 1996–97, indicates the period covered, but does not necessarily imply that each intervening year is included or that the yearly period has remained the same throughout the series.

Values are shown in Australian dollars (\$) or cents (c) unless another currency is specified.

Where figures have been rounded, discrepancies may occur between sums of the component items and totals.

# 1

# Geography and climate

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## Introduction

Geography is the science of the earth's form, its physical features, climate and population, and how they relate to each other. The first part of this chapter describes Australia's land forms and topographic features and how they were formed. The second part describes the island continent's wide range of climatic conditions. The third part discusses water resources, a major factor in land form and climate which impacts on many aspects of life in Australia.

## Geography of Australia

### Position and area

Australia comprises a land area of about 7,692,030 km<sup>2</sup> (see table 1.1). The land lies

between latitudes 10°41' south (Cape York) and 43°39' south (South East Cape, Tasmania) and between longitudes 113°09' east (Steep Point, Western Australia) and 153°39' east (Cape Byron, New South Wales). The most southerly point on the mainland is South Point (Wilson's Promontory) 39°08' south. The latitudinal distance between Cape York and South Point is about 3,180 km, while the latitudinal distance between Cape York and South East Cape, Tasmania, is 3,680 km. The longitudinal distance between Steep Point and Cape Byron is about 4,000 km.

The area of Australia is almost as great as that of the United States of America (excluding Alaska), about 50% greater than Europe (excluding the former USSR) and 32 times greater than the United Kingdom. Tables 1.2 and 1.3 show the area of Australia in relation to areas of other continents and selected countries.

**1.1 AREA, COASTLINE, TROPICAL AND TEMPERATE ZONES, AND STANDARD TIMES**

	Estimated area		Length of coastline(a)	% of total area		Standard times	
	Total	Total area		Tropical zone	Temperate zone	Meridian selected	Ahead of GMT(b)
State/Territory	km <sup>2</sup>	%	km				hours
New South Wales	800 640	10.41	2 140	..	100	150°E	10.0
Victoria	227 420	2.96	2 510	..	100	150°E	10.0
Queensland	1 730 650	22.5	13 350	54	46	150°E	10.0
South Australia	983 480	12.79	5 070	..	100	142°30' E	9.5
Western Australia	2 529 880	32.89	20 780	37	63	120°E	8.0
Tasmania	68 400	.89	4 880	..	100	150°E	10.0
Northern Territory	1 349 130	17.54	10 950	81	19	142°30' E	9.5
Australian Capital Territory	2 360	.03	..	..	100	150°E	10.0
Jervis Bay Territory	70	..	60	..	100	150°E	10.0
<b>Australia</b>	<b>7 692 030</b>	<b>100.00</b>	<b>59 740</b>	<b>39</b>	<b>61</b>	<b>..</b>	<b>..</b>

(a) Includes islands. (b) Greenwich Mean Time. During daylight saving periods, an hour should be added to the times in this column.

Source: Bureau of Meteorology and AUSLIG.

### 1.2 AREAS OF CONTINENTS

	Area '000 km <sup>2</sup>
Continents	
Asia	44 614
Africa	30 319
North, Central America and West Indies	24 247
South America	17 834
Europe	10 600
Australia and Oceania	8 504
<b>Total land mass (excluding Antarctic continent)</b>	<b>135 774</b>

Source: *Encyclopedia Britannica; World Book Encyclopedia.*

### 1.3 AREAS OF SELECTED COUNTRIES

	Area '000 km <sup>2</sup>
COUNTRIES (SEVEN LARGEST)	
Russia	17 073
Canada	9 976
China	9 590
United States of America	9 363
Brazil	8 512
Australia	7 692
India	3 288
SELECTED OTHER COUNTRIES	
Belorus	208
France	544
Germany	357
Indonesia	1 919
Japan	372
Kazakhstan	2 717
Papua New Guinea	462
New Zealand	269
Ukraine	604
United Kingdom	244

Source: *Encyclopaedia Britannica; World Book Encyclopedia; AUSLIG.*

## Landforms and their history

Australia is the lowest, flattest and, apart from Antarctica, the driest of the continents. Unlike Europe and North America, where some landscapes date back to 'only' 20,000 years ago, when great ice sheets retreated, the age of landforms in Australia is generally measured in many millions of years. This fact gives Australia a very distinctive physical geography. Map 1.4 shows the elevation of the Australian continent.

The continent can be divided into three parts:

- the Western Plateau;
- the Central Lowlands; and
- the Eastern Highlands.

The Western Plateau consists of very old rocks (some over 3,000 million years old), and much of it has existed as a landmass for over 500 million years. Several parts have individual plateau names (e.g. Kimberley, Hammersley, Arnhem Land, Yilgarn). In the Perth area, younger rocks along a coastal strip are separated from the rest by the Darling Fault escarpment. The Nullabor Plain is virtually an uplifted sea floor, a limestone plain of Miocene age (about 25 million years).

The Central Lowlands stretch from the Gulf of Carpentaria through the Great Artesian Basin to the Murray–Darling Plains. The Great Artesian Basin is filled with sedimentary rocks which hold water that enters in the wetter Eastern Highlands.

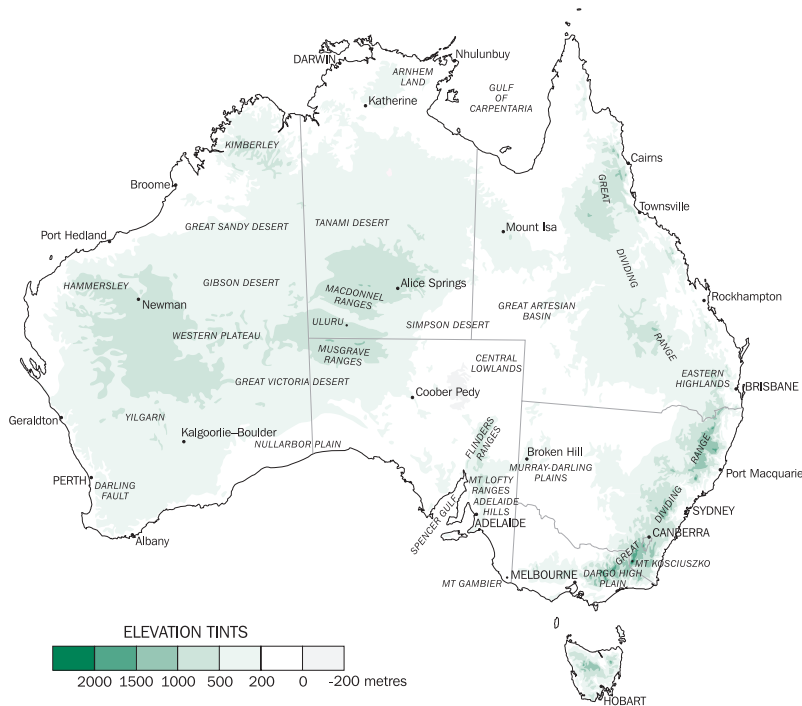
Much of the centre of Australia is flat, but there are numerous ranges (e.g. Macdonnells, Musgrave) and some individual mountains of which Uluru (Ayers Rock) is probably the best known. Faulting and folding in this area took place long ago. The area was worn to a plain, the plain uplifted and then eroded to form the modern ranges on today's plain. In looking at Uluru, one remarkable thing is not so much how it got there, but that so much has been eroded from all around, to leave it there.

In the South Australian part of the Central Lowlands, fault movements are more recent, and the area can be considered as a number of blocks that have been moved up and down to form a series of ranges (Mt Lofty, Flinders Ranges) and hills (such as the Adelaide Hills), with the down faulted blocks occupied by sea (e.g. Spencer Gulf) or lowlands including the lower Murray Plains.

The Eastern Highlands rise gently from central Australia towards a series of high plateaus, and even the highest part around Mt Kosciuszko (2,228 metres) is part of a plateau.

There are a few younger faults and folds, such as the Lake George Fault near Canberra, and the Lapstone Monocline near Sydney.

## 1.4 AUSTRALIA, Elevation



Source: AUSLIG 1996.

Some plateaus in the Eastern Highlands are dissected by erosion into rugged hills, and the eastern edges of plateaus tend to form high escarpments. Many of these are united to form a Great Escarpment that runs from northern Queensland to the Victorian border. Australia's highest waterfalls (Wollombi on the Macleay, Wallaman Falls on a tributary of the Herbert, Barron Falls near Cairns, and Wentworth Falls in the Blue Mountains) all occur where rivers flow over the Great Escarpment. For most of its length the Great Dividing Range (separating rivers flowing to Central Australia from rivers flowing to the Pacific) runs across remarkably flat country dotted with lakes and airstrips. In eastern Victoria, however, the old plateau has been eroded into separate High Plains (such as Dargo High Plain).

The present topography results from a long landscape history which can be started in the Permian, about 290 million years ago, when much of Australia was glaciated by a huge ice cap. After the ice melted, parts of the continent

subsided and were covered with sediment to form sedimentary basins such as the Great Artesian Basin. By early Cretaceous times, about 140 million years ago, Australia was already so flat and low that a major rise in sea level divided it into three landmasses as the shallow Cretaceous sea spread over the land.

In the following Tertiary times, Australia can be regarded as a landscape of broad swells varied by a number of sedimentary basins (Murray, Gippsland, Eucla, Carpentaria, Lake Eyre and other basins). These slowly filled up and some are now sources of coal or oil. The Eastern Highlands were uplifted about this time.

Throughout the Tertiary, volcanoes erupted in eastern Australia. Some individual volcanoes were the size of modern Vesuvius, and huge lava plains covered large areas. Volcanic activity continued up to a few thousand years ago in Victoria and Queensland. Australia's youngest volcano is Mt Gambier in South Australia, about 6,000 years old.

Between 55 and 10 million years ago, Australia drifted across the surface of the earth as a plate, moving north from a position once adjacent to Antarctica. There have been many changes in the climate of Australia in the past, but oddly these do not seem to be due to changing latitude (associated with global scale plate movements). Even when Australia was close to the South Pole, the climate was relatively warm and wet, and this persisted for a long time despite changes in latitude. It was probably under this climate that the deep weathered, iron-rich profiles that characterise much of Australia were formed. Aridity only seems to have set in after Australia reached its present latitude, and the northern part was probably never arid.

Today a large part of Australia is arid or semi-arid. Sand dunes are mostly longitudinal and are aligned with dominant wind directions associated with the regular passage of high pressure cells (anticyclones). These 'highs' rotate anticlockwise and track at about 28°S in winter and 38°S in summer, resulting in predominantly south-east to easterly flows in the north and north-west to westerly flows in the south. Looking down from above, the south-east Trade Winds or 'Trades' would be those winds in the top right hand quarter of a hypothetical, stationary 'high' centred on the Australian continent.

The dunes are mostly fixed now. Stony deserts or gibber plains (covered with small stones or 'gibbers') are areas without a sand cover and occupy a larger area than the dunefields. Salt lakes occur in many low positions, in places following lines of ancient drainage. They are often associated with lunettes, dunes formed on the downwind side of lakes. Many important finds of Aboriginal prehistory have been made in lunettes. Despite the prevalence of arid conditions today, real aridity seems to be geologically young, with no dunes or salt lakes older than a million years.

The past few million years were notable for the Quaternary ice age. There were many glacial and interglacial periods (over 20) during this time, the last glacial period occurring about 20,000 years ago. In Tasmania, there is evidence of three different glaciations: the last glaciation, one sometime in the Quaternary, and one in the Tertiary. On the mainland, there is evidence of only the last glaciation, and the ice then covered only 25 km<sup>2</sup>, in the vicinity of Mt Kosciuszko.

The broad shape of Australia has been influenced over long periods by earth movements associated with large tectonic processes. However, much of the detail has been carved by river erosion. A significant number of Australia's rivers, like the Diamantina River, drain inland. While they may be eroding their valleys near their highland sources, their lower courses are filling up with alluvium, and the rivers often end in salt lakes which are dry for most of the time. Other rivers reach the sea, and have dissected a broad near-coast region into plateaus, hills and valleys. Many of the features of the drainage pattern of Australia have a very long history, and some individual valleys have maintained their position for hundreds of millions of years. The salt lakes of the Yilgarn Plateau in Western Australia are the remnants of a drainage pattern that was active before continental drift separated Australia from Antarctica.

During the last ice age, sea level was more than 100 metres lower than it is today; the current outer reef area of the Great Barrier Reef would have been the coast at that time. The rivers tended to cut down to the lower level, especially towards the sea. When the sea level rose again, some of the lower valleys were drowned, making fine harbours—like Sydney Harbour—while others tended to fill with alluvium as the sea rose—making the typical lowland valleys around the Australian coast.

Coastal geomorphology is also largely the result of the accumulation of sediment in drowned coasts. In some areas, such as Ninety Mile Beach (Victoria) or the Coorong (South Australia), there are beaches made simply from this accumulation. In much of the east there is a characteristic alternation of rocky headland and long beach, backed by plains filled with river and marine sediments.

The offshore shape of Australia, revealed in isobath contours, results mainly from the pattern of break-up of the super-continent of which Australia was once a part. In some areas, such as the Great Australian Bight, there is a broad continental shelf bounded by a steeper continental slope. In other areas, like south-east New South Wales around Merimbula and much of the Tasmanian coastline, the continental shelf is very narrow, sometimes coming to within 20 nautical miles of the coast. The Queensland coast is bounded by a broad plateau on which the Great Barrier Reef has grown in only the last two million years. In South Australia, the continental shelf is grooved by submarine canyons.



The Australian landforms of today are thus seen to result from long continued processes in a unique setting, giving rise to typical Australian landscapes, which in turn provide the physical basis for the distribution and nature of biological and human activity in Australia.

## Rivers and lakes

As can be inferred from the elevation and relief map (map 1.4), the rivers of Australia may be divided into two major classes; those of the coastal margins with moderate rates of fall and those of the central plains with very slight fall. Of the rivers of the east coast, the longest in Queensland are the Burdekin and the Fitzroy, while the Hunter is the longest coastal river of New South Wales. The longest river system in Australia is the Murray–Darling which drains part of Queensland, the major part of New South Wales and a large part of Victoria, finally flowing into the arm of the sea known as Lake Alexandrina, on the eastern side of the South Australian coast. The length of the Murray is about 2,520 km, and the Darling and Upper Darling together are also just over 2,000 km long. The rivers of the north-west coast of Australia, for example the Murchison, Gascoyne, Ashburton, Fortescue, De Grey, Fitzroy, Drysdale and Ord, are of considerable length. So also are those rivers in the Northern Territory, for example the Victoria and Daly, and those on the Queensland side of the Gulf of Carpentaria, such as the Gregory, Leichhardt, Cloncurry, Gilbert and Mitchell. The rivers of Tasmania have short and rapid courses, as might be expected from the configuration of the land.

There are many types of lake in Australia, the largest being drainage sumps from the internal rivers. In dry seasons, these lakes finally become beds of salt and dry mud. The largest are Lake Eyre 9,500 km<sup>2</sup>, Lake Torrens 5,900 km<sup>2</sup> and Lake Gairdner 4,300 km<sup>2</sup>.

Other lake types are glacial, most common in Tasmania; volcanic crater lakes, predominantly in Victoria and Queensland; fault angle lakes, of which Lake George near Canberra is a good example; and coastal lakes formed by marine damming of valleys.

## Climate of Australia

The island continent of Australia features a wide range of climatic zones, from the tropical regions of the north, through the arid expanses of the interior, to the temperate regions of the south.

Widely known as ‘The Dry Continent’, the land mass is relatively arid, with 80% having a median rainfall less than 600 mm per year and 50% less than 300 mm (the average is 450 mm). Seasonal fluctuations can be large, with temperatures ranging from above 50°C to well below zero. However, extreme minimum temperatures are not as low as those recorded in other continents, probably because of the absence of extensive mountain masses to induce orographic cooling (which is in the order of -0.6°C/100 m increase in elevation) and because of the large expanse of relatively warm surrounding oceans.

Although the climate can be described as predominantly continental, the insular nature of the land mass produces modifications to the general continental pattern.

Australia experiences many of nature’s more extreme phenomena, particularly droughts, floods, tropical cyclones, severe storms and bushfires.

## Climatic controls

The generally low relief of Australia is evident in the elevation and relief map (map 1.4). Compared to other continents, Australia causes little obstruction to the atmospheric systems which control the climate. A notable exception is the eastern uplands which modify the atmospheric flow, sometimes causing the ‘Easterly Dip’ which is evident in some surface pressure charts.

In the winter half of the year (May–October) anticyclones, or high pressure systems, pass from west to east across the continent and may remain almost stationary over the interior for several days. These anticyclones may be 4,000 km wide and, in the Southern hemisphere, rotate anticlockwise. Northern Australia is thus influenced by mild, dry south-east winds, and southern Australia experiences cool, moist westerly winds. The westerlies and the frontal systems associated with extensive depressions (lows, sometimes called extra-tropical cyclones) travelling over the Southern Ocean have a controlling influence on the climate of southern Australia during the winter season, causing rainy periods. Periodic north-west cloud bands in the upper levels of the atmosphere over the continent may interact with southern systems to produce rainfall episodes, particularly over eastern areas. Cold outbreaks, particularly in south-east Australia, occur when cold air of Southern Ocean origin is directed northwards by intense depressions having diameters up to

2,000 km. Cold fronts associated with the southern depressions, or with secondary depressions over the Tasman Sea, may produce strong winds and large day-to-day variations in temperature in southern areas, particularly in south-east coastal regions.

In the summer half of the year (November–April) the anticyclones travel from west to east on a more southerly track across the southern fringes of Australia, directing easterly winds generally over the continent. Fine, warmer weather predominates in southern Australia with the passage of each anticyclone. Heat waves occur when there is an interruption to the eastward progression of the anticyclone ('blocking') and winds back northerly and later north-westerly. Northern Australia comes under the influence of summer disturbances associated with the southward intrusion of warm moist monsoonal air from north of the intertropical convergence zone, resulting in a hot rainy season. Southward dips of the monsoonal low pressure trough sometimes spawn tropical depressions, and may prolong rainy conditions over northern Australia for up to three weeks at a time.

Tropical cyclones are strong, well-organised low pressure systems of tropical origin where average surface winds are expected to reach at least gale force (speed equivalent of 34–47 knots)—gusts can be up to 50% higher than the average. Winds associated with severe tropical cyclones reach at least hurricane force (64 knots)—the highest wind speed recorded in Australia was 267 km/h, which occurred with Cyclone Olivia (April 1996). Tropical cyclones develop over the seas around northern Australia where temperatures exceed 27°C in summer. Interestingly, tropical cyclones do not usually form within 5° (or so) north or south of the Equator because the Coriolis Force associated with the rotation of the Earth is close to zero in this zone and this 'twist' is important for cyclone formation. Their frequency of occurrence and the tracks they follow vary greatly from season to season. On average, about three cyclones per season directly affect the Queensland coast, and about three affect the north and north-west coasts. Tropical cyclones approaching the coast usually produce very heavy rain and high winds in coastal areas. Some cyclones move inland, losing intensity but still producing widespread heavy rainfall and, occasionally, moderate to severe damage.

The climate of eastern and northern Australia is influenced by the Southern Oscillation (SO), a see-sawing of atmospheric pressure between the

northern Australian/Indonesian region and the central Pacific Ocean. This Oscillation is one of the most important causes of climatic variation after the annual seasonal cycle over eastern and northern Australia. The strength of the SO is defined by the Southern Oscillation Index, which is a measure of the difference in sea level atmospheric pressure between Tahiti in the central Pacific and Darwin in northern Australia. At one extreme of the Oscillation, the pressure is abnormally high at Darwin and abnormally low at Tahiti. Severe and widespread drought over eastern and northern Australia generally accompanies this extreme. These conditions generally commence early in the year, last for about 12 months, and have a recurrence period of two to seven years.

The above extreme is generally immediately preceded or followed by the opposite extreme where pressures at Darwin are abnormally low and those at Tahiti are abnormally high. In this case, rainfall is generally above average over eastern and northern Australia.

The SO is linked to sea surface temperatures (SSTs) in the Pacific Ocean. Dry extreme SO years are accompanied by above normal SSTs in the central and/or eastern equatorial Pacific and vice versa. Dry extreme years are called El Niño years (El Niño is 'baby boy' in Spanish). Wet extreme years are called La Niña years (La Niña is 'baby girl'). Continuing research into the El Niño/La Niña phenomenon is revealing the connectivity between atmospheric circulation, sea surface temperatures, currents (surface as well as deep currents) and their interaction with the land masses. An article in the *Geography and climate* chapter of *Year Book Australia, 1998* provides further detail.

## **Rainfall and other precipitation**

### **Annual**

The area of lowest rainfall is in the vicinity of Lake Eyre in South Australia, where the median annual rainfall is only about 100 mm. Another very low rainfall area is in Western Australia in the region of the Giles-Warburton Range, which has a median annual rainfall of about 150 mm. A vast region, extending from the west coast near Shark Bay across the interior of Western Australia and South Australia to south-west Queensland and north-west New South Wales, has a median annual rainfall of less than 200 mm. This region is not normally exposed to moist air masses for extended periods and rainfall is irregular, averaging only one or two days per

month. However, in favourable synoptic situations, which occur infrequently over extensive parts of the region, up to 400 mm of rain may fall within a few days and cause widespread flooding.

The region with the highest median annual rainfall is the east coast of Queensland between Cairns and Cardwell, where Tully has a median of 4,048 mm (63 years to 1987 inclusive). The mountainous region of western Tasmania also has a high annual rainfall, with Lake Margaret having a median of 3,565 mm (76 years to 1987 inclusive). In the mountainous areas of north-east Victoria and some parts of the east coastal slopes there are small pockets with median annual rainfall greater than 2,500 mm.

The Snowy Mountains area in New South Wales also has a particularly high rainfall. The highest median annual rainfall for this region is

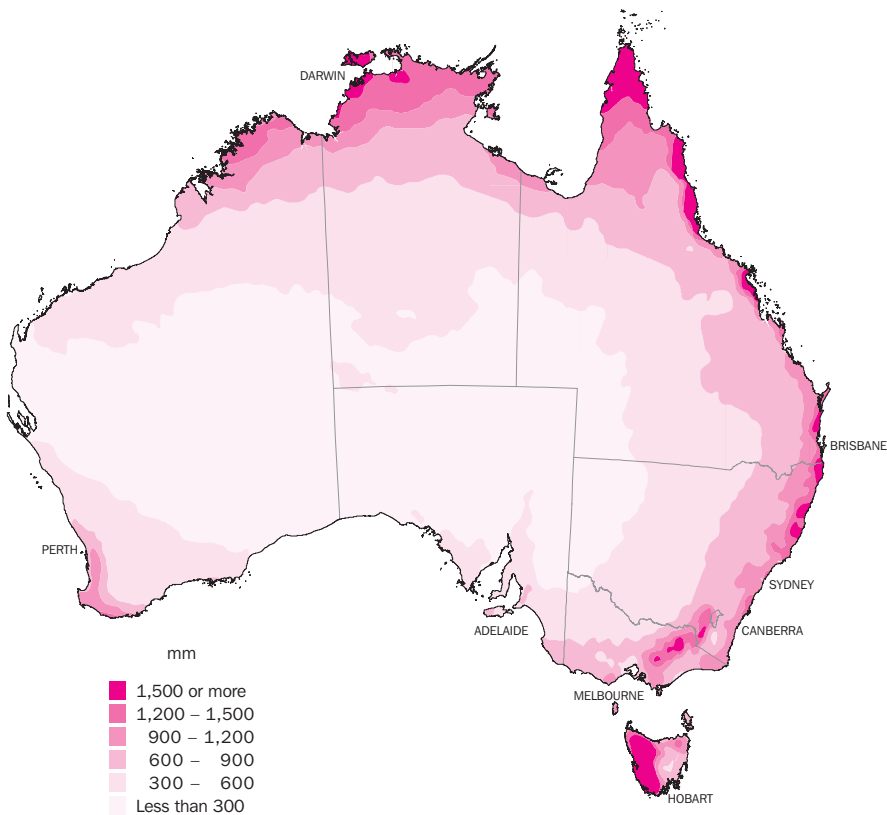
3,200 mm, and it is likely that small areas have a median annual rainfall approaching 4,000 mm on the western slopes above 2,000 metres elevation. Map 1.5 shows average annual rainfall over the Australian continent.

### Seasonal

As outlined earlier, the rainfall pattern of Australia is strongly seasonal in character with a winter rainfall regime in the south and a summer regime in the north.

The dominance of rainfall over other climatic elements in determining the growth of specific plants in Australia has led to the development of a climatic classification based on two main parameters, median annual rainfall and the incidence of seasonal rainfall.

## 1.5 AVERAGE ANNUAL RAINFALL



Source: Bureau of Meteorology.

Evaporation and the concept of rainfall effectiveness are taken into account to some extent in this classification by assigning higher median annual rainfall limits to the summer zones than to the corresponding uniform and winter zones. The main features of the seasonal rainfall are:

- marked wet summer (the 'Monsoon') and dry winter of northern Australia;
- wet summer and relatively dry winter of south-eastern Queensland and north-eastern New South Wales;
- uniform rainfall in south-eastern Australia—much of New South Wales, parts of eastern Victoria and southern Tasmania;
- marked wet winter and dry summer of south-west Western Australia and, to a lesser extent, much of the remainder of southern Australia directly influenced by westerly circulation (sometimes called a 'Mediterranean' climate); and
- arid area comprising about half the continent extending from the north-west coast of Western Australia across the interior and reaching the south coast at the head of the Great Australian Bight.

### Rainday frequency

A rainday occurs when more than 0.2 mm of rain falls in 24 hours, usually from 9 a.m. to 9 a.m. the next day. The frequency of raindays exceeds 150 per year in Tasmania (with a maximum of over 200 in western Tasmania), southern Victoria, parts of the north Queensland coast and in the extreme south-west of Western Australia. Over most of the continent the frequency is less than 50 raindays per year. The area of low rainfall with high variability, extending from the north-west coast of Western Australia through the interior of the continent, has less than 25 raindays per year. In the high rainfall areas of northern Australia, the number of raindays is about 80 per year, but heavier falls occur in this region than in southern regions.

### Rainfall intensity

The values in table 1.6 represent intensities over only small areas around the recording points because turbulence and exposure characteristics of the measuring gauge may vary over a distance of a few metres. The highest 24 hour (9 a.m. to 9 a.m.) falls are listed in table 1.7. Most of the very high 24 hour falls (above 700 mm) have occurred in the coastal strip of Queensland, where a tropical cyclone moving close to mountainous terrain provides ideal conditions for spectacular falls.

**1.6 HIGHEST RAINFALL INTENSITIES**

Station	Period of record	Years of complete records	Period in hours				
			1	3	6	12	24
			mm	mm	mm	mm	mm
Adelaide	1897–1998	92	59	133	141	141	141
Alice Springs	1951–1998	44	75	87	109	160	207
Brisbane	1911–1994	84	99	142	182	266	327
Broome	1948–1998	48	157	322	429	470	497
Canberra	1937–1990	42	40	57	69	99	135
Carnarvon	1956–1998	38	44	63	83	95	108
Charleville	1953–1997	42	42	66	88	118	142
Darwin (airport)	1953–1998	41	89	160	189	262	380
Esperance	1963–1998	31	39	50	62	75	86
Hobart	1911–1997	86	28	56	87	117	168
Meekatharra	1953–1998	42	60	67	81	111	120
Melbourne	1873–1998	107	75	91	91	97	130
Mildura	1953–1998	40	53	60	68	68	91
Perth	1946–1991	45	33	43	52	77	97
Sydney	1913–1998	82	120	191	197	244	340
Townsville	1953–1998	44	94	168	235	296	319

Source: Pluviograph records in Bureau of Meteorology archives.

**1.7 HIGHEST DAILY RAINFALLS(a)**

	Amount	Date
State/Territory	mm	
New South Wales		
Dorrigo (Myrtle Street)	809	21.2.1954
Lowanna (Yalamurra)	662	22.4.1974
Victoria		
Tanybryn	375	22.3.1983
Nowa Nowa (Wairawa)	275	12.3.1906
Queensland(a)		
Beerwah (Crohamhurst)	907	3.2.1893
Finch Hatton PO	878	18.2.1958
South Australia		
Motpena	273	14.3.1989
Nilpena	247	14.3.1989
Western Australia		
Roebourne (Whim Creek)	747	3.4.1898
Roebuck Plains	568	6.1.1917
Tasmania		
Cullenswood	352	22.3.1974
Mathinna	337	5.4.1929
Northern Territory		
Roper Valley Station	545	15.4.1963
Angurugu (Groote Eylandt)	513	28.3.1953

(a) Bellenden Ker (Top Station) has recorded a 24 hour total of 960 mm from 3 p.m. to 3 p.m. on 3 and 4 January 1979. The standard daily rainfall period is 9 a.m. to 9 a.m.

Source: Bureau of Meteorology.

**1.8 HIGHEST ANNUAL RAINFALLS**

	Station	Year	Amount
State/Territory			mm
NSW	Tallowood Point	1950	4 540
Vic.	Falls Creek SEC	1956	3 739
Qld	Bellenden Ker (Top Station)	1979	11 251
SA	Aldgate State School	1913	1 853
WA	Armadale (Jarrahdale PO)	1917	2 169
Tas.	Lake Margaret	1948	4 504
NT	Garden Point	1974	2 761

Source: Bureau of Meteorology.

The highest annual rainfalls are listed by State/Territory in table 1.8.

**Thunderstorms and hail**

A thunderday at a given location is a calendar day on which thunder is heard at least once. The average annual number of thunderdays varies from 74 per year near Darwin to less than 10 per year over parts of the southern regions. Convectional processes during the summer wet season cause high thunderstorm incidence in northern Australia. The generally high incidence

of thunderdays (40–60 annually) over the eastern upland areas is caused mainly by orographic uplift of moist air streams.

Hail, mostly of small size (less than 10 mm diameter), occurs with winter-spring cold frontal activity in southern Australia. Summer thunderstorms, particularly over the uplands of eastern Australia, sometimes produce large hail (greater than 10 mm diameter). Large hail capable of piercing light-gauge galvanised iron occurs at irregular intervals and sometimes causes widespread damage.

**Snow**

Generally, snow covers much of the Australian Alps above 1,500 metres for varying periods from late autumn to early spring. Similarly, in Tasmania the mountains are covered fairly frequently above 1,000 metres in these seasons. The area, depth and duration are highly variable. In some years, snow falls in the altitude range of 500–1,000 metres. Snowfalls at levels below 500 metres are occasionally experienced in southern Australia, particularly in the foothill areas of Tasmania and Victoria, but falls are usually light and short lived. In some seasons, parts of the eastern uplands above 1,000 metres from Victoria to south-eastern Queensland have been covered with snow for several weeks. In ravines around Mount Kosciuszko (2,228 metres) small areas of snow may persist through summer, but there are no permanent snowfields.

**Temperature****Average temperatures**

Average annual air temperatures range from 28°C along the Kimberley coast in the extreme north of Western Australia to 4°C in the alpine areas of south-eastern Australia. Although annual temperatures may be used for broad comparisons, monthly temperatures are required for detailed analyses.

July is the month with the lowest average temperature in all parts of the continent. The months with the highest average temperature are January or February in the south and December in the north (except in the extreme north and north-west where it is November). The slightly lower temperatures of mid-summer in the north are due to the increase in cloud during the wet season.

### Average monthly maxima

In January, average maximum temperatures exceed 35°C over a vast area of the interior and exceed 40°C over appreciable areas of the north-west. The consistently hottest part of Australia in terms of summer maxima is around Marble Bar in Western Australia (150 km south-east of Port Hedland) where the average is 41°C and daily maxima during summer may exceed 40°C consecutively for several weeks at a time.

In July, a more regular latitudinal distribution of average maxima is evident. Maxima range from 30°C near the north coast to 5°C in the alpine areas of the south-east.

### Average monthly minima

In January, average minima range from 27°C on the north-west coast to 5°C in the alpine areas of the south-east. In July, average minima fall below 5°C in areas south of the tropics (away from the coasts). Alpine areas record the lowest temperatures; the July average low is -5°C.

### Extreme maxima

Temperatures have exceeded 45°C at nearly all inland stations more than 150 km from the coast and at many places on the north-west and south coasts. Temperatures have exceeded 50°C at some inland stations and at a few near the coast. It is noteworthy that Eucla on the south coast has recorded 50.7°C, the highest temperature in Western Australia. This is due to the long trajectory over land of hot north-west winds from the Marble Bar area. Although the highest temperature recorded in Australia was 53.1°C at Cloncurry (Queensland), more stations have exceeded 50°C in western New South Wales than in other areas due to the long land trajectory of hot winds from the north-west interior of the continent.

Extreme maximum temperatures recorded at selected stations, including the highest recorded in each State/Territory, are shown in table 1.9.

### 1.9 EXTREME MAXIMUM TEMPERATURES

Station	°C	Date
New South Wales		
Bourke	52.8	17.1.1877
Wilcannia	50.0	11.1.1939
Menindee	49.7	10.1.1939
Victoria		
Mildura	50.8	6.1.1906
Swan Hill	49.4	18.1.1906
Queensland		
Cloncurry	53.1	16.1.1889
Winton	50.7	14.12.1888
Birdsville	49.5	24.12.1972
South Australia		
Oodnadatta	50.7	2.1.1960
Marree	49.4	2.1.1960
Whyalla	49.4	2.1.1960
Western Australia		
Mardie	50.5	20.2.1998
Mundrabilla	49.8	3.1.1979
Forrest	49.8	13.1.1979
Madura	49.4	7.1.1971
Tasmania		
Bushy Park	40.8	26.12.1945
Hobart	40.8	4.1.1976
Northern Territory		
Finke	48.3	2.1.1960
Jervois	47.5	3.1.1978
Australian Capital Territory		
Canberra (Acton)	42.8	11.1.1939

Source: Bureau of Meteorology.

### Extreme minima

The lowest temperatures in Australia have been recorded in the Snowy Mountains, where Charlotte Pass (elevation 1,760 metres) recorded -23.0°C on 28 June 1994 (see table 1.10). Temperatures have fallen below -5°C at most inland places south of the tropics and at some places within a few kilometres of southern coasts. At Eyre, on the south coast of Western Australia, a minimum temperature of -4.3°C has been recorded, and at Swansea, on the east coast of Tasmania, the temperature has fallen as low as -5.0°C.

In the tropics, extreme minima below 0°C have been recorded at many places away from the coasts—as far north as Herberton, Queensland (-5.0°C). Even very close to the tropical coastline, temperatures have fallen to 0°C, a low recording being -0.8°C for Mackay.



**1.10 EXTREME MINIMUM TEMPERATURES**

Station	°C	Date
New South Wales		
Charlotte Pass	-23.0	18.6.1994
Kiandra	-20.6	2.8.1929
Perisher Valley	-19.5	23.7.1979
Victoria		
Mount Hotham	-12.8	30.7.1931
Omeo	-11.7	15.6.1965
Hotham Heights	-11.1	15.8.1968
Queensland		
Stanthorpe	-11.0	4.7.1895
Warwick	-10.6	12.7.1965
Mitchell	-9.4	15.8.1979
South Australia		
Yongala	-8.2	20.7.1976
Yunta	-7.7	16.7.1976
Erabella	-7.6	19.7.1983
Western Australia		
Booylgoo Springs	-6.7	12.7.1969
Wandering	-5.7	1.6.1964
Tasmania		
Shannon	-13.0	30.6.1983
Butlers Gorge	-13.0	30.6.1983
Tarraleah	-13.0	30.6.1983
Northern Territory		
Alice Springs	-7.5	12.7.1976
Tempe Downs	-6.9	24.7.1971
Australian Capital Territory		
Gudgenby	-14.6	11.7.1971

Source: Bureau of Meteorology.

**Heat waves**

Periods with a number of successive days having a temperature higher than 40°C are relatively common in summer over parts of Australia. With the exception of the north-west coast of Western Australia, however, most coastal areas rarely experience more than three successive days of such conditions. The frequency increases inland, and periods of up to ten successive days have been recorded at many inland stations. This figure increases to more than 20 days in parts of western Queensland and north-west Western Australia. The central part of the Northern Territory and the Marble Bar–Nullagine area of Western Australia have recorded the most prolonged heat waves. Marble Bar is the only station in the world where temperatures of more than 37.8°C (100°F) have been recorded on as many as 161 consecutive days (30 October 1923 to 7 April 1924).

Heat waves are experienced in the coastal areas from time to time. During 11–14 January 1939, for example, a severe heat wave affected south-eastern Australia: Adelaide had a record of 47.6°C on the 12th, Melbourne a record of 45.6°C on the 13th and Sydney a record of 45.3°C on the 14th.

The Kimberley district of Western Australia is the consistently hottest part of Australia in terms of annual average maximum temperature. Wyndham, for example, has an annual average maximum of 35.6°C.

**Other aspects of climate****Frost**

Frost can cause serious losses of agricultural crops, and numerous climatic studies have been made in Australia relating to specific crops cultivated in local areas.

Frost frequency depends on location and orography, and even on minor variations in topography. In simplified terms, location controls the extent to which the relatively warm ocean temperatures ameliorate those on land (often called ‘continentality’) and, on an even larger scale, location in this context means proximity to the Equator or to the cooler climates towards the south. Orography relates loosely to elevation (noting that an air parcel which rises above a mountain range will cool (by expansion) about 0.6°C for each 100 metres it rises above sea level), and to topography. Topography influences frost on a much more local scale than the other factors. It does this through controlling ‘cold air draining’, which is a night time phenomenon where cool air ‘flows’ down hillsides and accumulates in low lying areas, occasionally causing ‘frost hollows’ with very low temperatures. The topographic effect is largely independent of the other factors and can happen anywhere in complex terrain under clear and calm weather conditions.

Frost hazard will be greatest in areas which are away from the immediate coast, are at relatively high elevations and have complex terrain which is conducive to cold air drainage.

The parts of Australia which are most subject to frost are the eastern uplands from north-eastern Victoria to the western Darling Downs in southern Queensland. Most stations in this region experience more than ten nights a month with readings of 0°C (or under) for three to five months of the year. On Tasmania’s Central Plateau similar conditions occur for three to six months of the year. Frosts may occur within a few miles of the coasts except in the Northern Territory and most of the north Queensland coasts.

Regions in which frosts may occur at any time of the year comprise most of Tasmania, large areas of the tablelands of New South Wales, much of inland Victoria, particularly the north-east, and a small part of the extreme south-west of Western Australia. Over most of the interior of the continent, and on the highlands of Queensland as far north as the Atherton Plateau, frosts commence in April and end in September. Minimum temperatures below 0°C are experienced in most of the subtropical interior in June and July.

The median frost period over the continent varies from over 200 days per year in the south-eastern uplands areas south of the Hunter Valley, to zero days in northern Australia. In the southern regions of the continent, the annual frost period generally decreases from about 100 days inland to below 50 days towards the coast. However, there are appreciable spatial variations depending mainly on local orography. In Tasmania, the frost period exceeds 300 days on the uplands and decreases to 100 days near the coast.

The regions of mainland Australia most prone to heavy frosts are the eastern uplands and adjacent areas extending from Victoria through New South Wales to south-eastern Queensland. Stations above 1,000 metres in altitude in the southern parts of these uplands have more than 100 heavy frosts annually, and in the upland areas below 1,000 metres the annual frequency ranges from 100 to about 20. Over the remainder of southern Queensland, New South Wales and Victoria, although there are great spatial variations, the average annual frequency of heavy frosts typically ranges from about 20 inland to ten towards the coast.

In Tasmania, uplands above 1,000 metres have more than 100 heavy frosts annually and, in neighbouring areas, the frequency is about 100 decreasing to 20 towards the coasts. Even some coastal stations have a relatively high frequency (Swansea, for example, has 16).

The southern half of Western Australia, the whole of South Australia, and the Alice Springs district of the Northern Territory experience heavy frosts. Differences in annual frequencies between places are great, but in general the frequency is about ten inland decreasing towards the coasts. Some places average more than 20 heavy frosts annually, notably Wandering, Western Australia (22) and Yongala, South Australia (42). At Alice Springs, the annual average frequency is 12.

## Humidity

Australia is a dry continent in terms of the water vapour content or humidity of the air, and this element may be compared with evaporation to which it is related. Moisture content can be expressed by a number of parameters, of which the most commonly known is relative humidity. Relative humidity can be thought of as the relative evaporating power of the air; when the humidity is low, a wet surface, like our skin, can evaporate freely. When it is high, evaporation is retarded. People can feel this as discomfort or even stress as the body's ability to perspire (and hence cool) decreases with increasing relative humidity. The combination of high temperature and high humidity is potentially dangerous for people who are active in such conditions.

The main features of the relative humidity pattern are:

- over the interior of the continent there is a marked dryness during most of the year, notably towards the northern coast in the dry season (May–October);
- the coastal fringes are comparatively moist, although this is less evident along the north-west coast of Western Australia where continental effects are marked;
- in northern Australia, the highest values occur during the summer wet season (December–February) and the lowest during the winter dry season (June–August); and
- in most of southern Australia the highest values are experienced in the winter rainy season (June–August) and the lowest in summer (December–February).

## Global radiation

Global (short wave) radiation includes that radiation energy reaching the ground directly from the sun and that received indirectly from the sky, scattered downwards by clouds, dust particles, etc.

A high correlation exists between daily global radiation and daily hours of sunshine. On the north-west coast around Port Hedland, where average daily global radiation is the highest for Australia (640 milliwatt hours), average daily sunshine is also highest, being approximately ten hours. Sunshine is more dependent on variations in cloud coverage than is global radiation, since the latter includes diffuse



radiation from the sky as well as direct radiation from the sun. An example is Darwin where, in the dry month of July, sunshine approaches twice that of the wet (cloudy) month of January, but global radiation amounts for the two months are comparable.

### Sunshine

Sunshine here refers to bright or direct sunshine. Australia receives relatively large amounts of sunshine although seasonal cloud formations have a notable effect on its spatial and temporal distribution. Cloud cover reduces both incoming solar radiation and outgoing long wave radiation and thus affects sunshine, air temperature and other climatic elements on the Earth's surface.

Most of the continent receives more than 3,000 hours of sunshine a year, or nearly 70% of the total possible. In central Australia and the mid-west coast of Western Australia, totals slightly in excess of 3,500 hours occur. Totals of less than 1,750 hours occur on the west coast and highlands of Tasmania; this amount is only 40% of the total possible per year (about 4,380 hours).

In southern Australia, the duration of sunshine is greatest about December when the sun is at its highest elevation, and lowest in June when the sun is lowest. In northern Australia, sunshine is generally greatest over the period August to October prior to the wet season, and least over the period January to March during the wet season.

### Cloud

Seasonal changes in cloudiness vary with the distribution of rainfall. In the southern parts of the continent, particularly in the coastal and low-lying areas, the winter months are generally more cloudy than the summer months. This is due to the formation of extensive areas of stratiform cloud and fog during the colder months, when the structure of the lower layers of the atmosphere favours the physical processes resulting in this type of cloud. Particularly strong seasonal variability of cloud cover exists in northern Australia where skies are clouded during the summer wet season and mainly cloudless during the winter dry season. Cloud coverage is greater near coasts and on the windward slopes of the eastern uplands of Australia and less over the dry interior.

### Fog

The formation of fog depends on the occurrence of favourable meteorological elements—mainly temperature, humidity, wind and cloud cover. The nature of the local terrain is important for the development of fog and there is a tendency for this phenomenon to persist in valleys and hollows. The incidence of fog may vary significantly over distances as short as one kilometre.

Fog in Australia tends to be more common in the south than the north, although parts of the east coastal areas are relatively fog-prone even in the tropics. Incidence is much greater in the colder months, particularly in the eastern uplands. Fog may persist during the day, but rarely until the afternoon over the interior. The highest fog incidence at a capital city is at Canberra which has an average of 47 days per year on which fog occurs, 29 of which are in the period May to August. Brisbane averages 20 days of fog per year. Darwin averages only two days per year, in the months of July and August.

### Winds

The mid-latitude anticyclones are the chief determinants of Australia's two main prevailing wind streams. In relation to the west-east axes of the anticyclones these streams are easterly to the north and westerly to the south. The cycles of development, motion and decay of low-pressure systems to the north and south of the anticyclones result in diversity of wind-flow patterns. Wind variations are greatest around the coasts where diurnal land and sea-breeze effects are important.

Orography affects the prevailing wind pattern in various ways, such as the channelling of winds through valleys, deflection by mountains and cold air drainage from highland areas. An example of this channelling is the high frequency of north-west winds at Hobart caused by the north-west to south-east orientation of the Derwent River Valley.

Perth is the windiest capital with an average wind speed of 15.6 km/h; Canberra is the least windy with an average wind speed of 5.4 km/h.

The highest wind speeds and gusts recorded in Australia have been associated with tropical cyclones. The highest recorded gust was 259 km/h at Mardie (near Onslow), Western Australia on 19 February 1975, and gusts reaching 200 km/h have been recorded on several occasions in northern Australia with cyclone visitations. The highest gusts recorded at Australian capitals were 217 km/h at Darwin and 156 km/h at Perth.

## Droughts

Drought, in general terms, refers to an acute deficit of water supply to meet a specified demand. The best single measure of water availability in Australia is rainfall, although parameters such as evaporation and soil moisture are significant, even dominant in some situations. Demands for water are very diverse, hence the actual declaration of drought conditions for an area will generally also depend on the effects of a naturally occurring water deficit on the principal local industries.

Since the 1860s there have been ten major Australian droughts. Some of these major droughts could be described as periods consisting of a series of dry spells of various lengths, overlapping in time and space, and totalling up to about a decade. The drought periods of 1895–1903, 1958–68, 1982–83 and 1991–95 were the most devastating in terms of their extent and effects on primary production. The latter drought resulted in a possible \$5b cost to Australia's economy, and \$590m in drought relief by the Commonwealth Government. The remaining major droughts occurred in 1864–66 (and 1868), 1880–86, 1888, 1911–16, 1918–20 and 1939–45.

In this same period, several droughts of lesser severity caused significant losses over large areas of some States. They occurred in 1922–23 and 1926–29, 1933–38, 1946–49, 1951–52, 1970–73 and 1976.

South-eastern Australia (New South Wales, southern Queensland, Victoria, Tasmania and the settled parts of South Australia) contains about 75% of the nation's population, and droughts affecting this region have a markedly adverse impact on the economy. There have been nine severe droughts in south-eastern Australia since 1888, and these were encompassed within the major Australian droughts specified previously, except for the severe drought in 1972–73. Drought definitions and the area of coverage and length of droughts, together with related information, may be obtained from *Year Book Australia*, 1988.

## Floods

Widespread flood rainfall may occur anywhere in Australia, but it has a higher incidence in the north and in the eastern coastal areas. It is most economically damaging along the shorter streams flowing from the eastern uplands eastward to the seaboard of Queensland and New South Wales. These flood rains are notably

destructive in the more densely populated coastal river valleys of New South Wales—the Tweed, Richmond, Clarence, Macleay, Hunter and Nepean–Hawkesbury—all of which experience relatively frequent flooding. Although chiefly caused by summer rains, they may occur in any season.

The great Fitzroy and Burdekin river basins of Queensland receive flood rains during the summer wet seasons. Much of the run-off due to heavy rain in north Queensland west of the eastern uplands flows southward through the normally dry channels of the network of rivers draining the interior lowlands into Lake Eyre. This widespread rain may cause floods over an extensive area, but it soon seeps away or evaporates, occasionally reaching the lake in quantity. The Condamine and other northern tributaries of the Darling also carry large volumes of water from flood rains south through western New South Wales to the Murray, and flooding occurs along their courses at times.

Flood rains occur at irregular intervals in the Murray–Murrumbidgee system of New South Wales and Victoria, the coastal streams of southern Victoria and the north coast streams of Tasmania.

## Water resources

Rainfall, or the lack of it, is the most important single factor determining land use and rural production in Australia. The scarcity of both surface and ground water resources, together with the low rates of precipitation which restrict agriculture (quite apart from economic factors), has led to extensive programs to regulate supplies by construction of dams, reservoirs, large tanks and other storages.

The major topographical feature affecting the rainfall and drainage patterns in Australia is the absence of high mountain barriers. Australia's topographical features encompass sloping tablelands and uplands along the east coast Main Divide, the low plain and marked depression in the interior, and the Great Western Plateau.

Only one-third of the Australian land area drains directly to the ocean, mainly on the coastal side of the Main Divide and inland with the Murray–Darling system. With the exception of the latter, most rivers draining to the ocean are comparatively short, but account for the majority of the country's average annual discharge. Surface drainage is totally absent from some arid areas of low relief.

Australia's large area (7.7 million km<sup>2</sup>) and latitudinal range (3,700 km) have resulted in climatic conditions ranging from alpine to tropical. Two-thirds of the continent are arid or semi-arid, although good rainfalls (over 800 mm annually) occur in the northern monsoonal belt under the influence of the Australian–Asian monsoon, and along the eastern and southern highland regions under the influence of the great atmospheric depressions of the Southern Ocean. The effectiveness of the rainfall is greatly reduced by marked alternation of wet and dry seasons, unreliability from year to year, high temperatures and high potential evaporation.

The availability of water resources controls, to a large degree, the possibility and density of settlement; this in turn influences the quality of the water through production and disposal of waste. Most early settlements were established on the basis of reliable surface water supplies and, as a result, Australia's population is concentrated along the coast, mainly in the comparatively fertile, well-watered east, south-east and far south-west.

As settlement spread into the dry inland grazing country, the value of reliable supplies of underground water was realised. Observations of the disappearance of large quantities of the rainfall precipitated on the coastal ranges of eastern Australia eventually led to the discovery of the Great Artesian Basin which has become a major asset to the pastoral industry. Development, however, has not been without costs. Significant environmental degradation and deterioration in water quality are becoming evident. Table 1.11 summarises Australia's major ground water resources.

Permanent rivers and streams flow in only a small part of the continent. The average annual discharge of Australian rivers has been recently assessed at 397 teralitres, of which 100 teralitres are now estimated to be exploitable on a sustained yield basis. This is small in comparison with river flows on other continents.

In addition, there is a pronounced concentration of run-off in the summer months in northern Australia, while the southern part of the continent has a distinct, if somewhat less marked, winter maximum.

Even in areas of high rainfall, large variability in flow means that, for local regional development, most streams must be regulated by surface storage. However, in many areas evaporation is so great that storage costs are high in terms of yield. Extreme floods also add greatly to the cost of water storage, because of the need for adequate spillway capacity.

Table 1.12 provides a broad comparison of rainfall and run-off by continent. Table 1.13 summarises Australia's surface water resources.

The portion of run-off able to be diverted for use is very low compared with other continents, and results from the high variability of stream flow, high rates of evaporation and the lack of storage sites on many catchments. On an Australia-wide basis, only 21.5% of the divertible resource has currently been developed for use; much of the remaining resource is available in remote regions where development is impractical and uneconomic. In areas such as the Murray–Darling Division, where water is scarce, there are few resources not yet developed, and management is focusing on greater efficiency in water use.

### 1.11 MAJOR GROUND WATER RESOURCES

State/Territory	Ground water resource						
	Major divertible resource						Abstraction during 1983–84
	Area of aquifers km <sup>2</sup>	Fresh GL	Marginal GL	Brackish GL	Saline GL	Total GL	
New South Wales	595 900	881	564	431	304	2 180	242
Victoria	103 700	469	294	69	30	862	146
Queensland	1 174 800	1 760	683	255	144	2 840	962
South Australia	486 100	102	647	375	86	1 210	504
Western Australia	2 622 000	578	1 240	652	261	2 740	355
Tasmania	7 240	47	69	8	—	124	5
Northern Territory	236 700	994	3 380	43	10	4 420	24
<b>Australia</b>	<b>5 226 440</b>	<b>4 831</b>	<b>6 877</b>	<b>1 833</b>	<b>835</b>	<b>14 376</b>	<b>2 238</b>

Source: Australian Water Resources Council, 1987.

**1.12 RAINFALL AND RUN-OFF OF THE CONTINENTS**

Continent	Area km <sup>2</sup>	Average yearly rainfall mm	Run-off mm	Run-off %	Run-off km <sup>3</sup>
Africa	30 300 000	690	260	38	7 900
Asia	45 000 000	600	290	48	13 000
Australia	7 700 000	465	57	12	440
Europe	9 800 000	640	250	39	2 500
North America	20 700 000	660	340	52	6 900
South America	17 800 000	1 630	930	57	16 700

Source: Department of Resources and Energy, 1983.

**1.13 SURFACE WATER RESOURCES**

State/Territory	Area km <sup>2</sup>	Surface water resource							
		Mean annual run-off GL	Mean annual outflow GL	Major divertible resource				Total GL	Developed resource GL
				Fresh GL	Marginal GL	Brackish GL	Saline GL		
New South Wales(a)	802 000	42 400	37 200	16 900	—	—	—	16 900	7 970
Victoria	228 000	19 200	18 800	9 050	240	120	—	9 810	5 990
Queensland	1 730 000	159 000	158 000	32 700	—	—	—	32 700	3 840
South Australia	984 000	2 120	1 250	193	109	59	20	384	124
Western Australia	2 520 000	39 900	39 700	10 200	516	856	168	11 700	2 340
Tasmania	68 200	52 900	52 900	10 800	—	—	—	10 900	1 020
Northern Territory	1 350 000	81 200	79 200	17 700	—	—	—	17 700	59
Australian Capital Territory	2 400	549	549	175	—	—	—	175	106
<b>Australia</b>	<b>7 684 600</b>	<b>397 300</b>	<b>387 600</b>	<b>97 700</b>	<b>865</b>	<b>1 040</b>	<b>190</b>	<b>100 300</b>	<b>21 500</b>

(a) Includes Jervis Bay Territory.

Source: Australian Water Resources Council, 1987.

Water resources are assessed within a framework comprising four levels:

- the total water resource is the volume of water present in the environment, measured as mean annual run-off for surface water, and mean annual recharge for ground water;
- the divertible resource is the portion of run-off and recharge which can be developed for use;
- the developed resource is the portion of the divertible resource which has been developed for use; and
- resource utilisation is a measure of the portion of the developed resource which is actually used.

Emphasis is given to the second level of assessment, the divertible resource, as the prime measure of the resource. The divertible resource is defined as the average annual volume of water which, using current technology, could be removed from developed or potential surface water or ground water sources on a sustained

basis, without causing adverse effects or long-term depletion of storages.

Australia's water resources are managed by a large number of resource management agencies, irrigation authorities, metropolitan water boards, local government councils and private individuals. State authorities dominate the assessment and control of water resources as, under the Commonwealth Constitution, primary responsibility for management of water rests with the individual State Governments. The Commonwealth Government is responsible for matters relating to the Territories, and participates indirectly through financial assistance or directly in the coordination or operation of interstate projects through bodies such as the Murray–Darling Basin Commission.

A description of the management, main storage and use of water resources across the States and Territories is contained in the chapter *Water resources* in the 1994 and earlier editions of *Year Book Australia*.

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World Book Encyclopedia.



## 2

# Government

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## Introduction

There are three levels of government in Australia: Federal, State and local.

The six Australian colonies federated in 1901 to form the Commonwealth of Australia. Most of the Commonwealth Parliament's legislative powers are enumerated in Section 51 of the Constitution. Areas of power not specified remain the responsibility of the States and Territories. A system of local government, established under State legislation, creates a third tier of government. In 1996, Australia had 842 elected members of Parliament, of whom 224 were Commonwealth and 618 State and Territory members.

Both the State and the Commonwealth systems of government derive from the British Westminster system, although many features of the Commonwealth Constitution (including the federal structure) are based on the United States Constitution. Generally, however, the salient features of the Westminster system have been retained. Ministers are members of Parliament, and are required to be accountable and answerable to it. In the twentieth century, Australia has been characterised by a strong party system and adversarial style of politics between the government and opposition.

This chapter outlines the basic features of the constitutional structure of the Commonwealth Parliament and Government and its electoral system, and the role of the Commonwealth Parliament and its relationship to the Executive, and provides details of the Ministry and other political leaders.

The Australian Constitution is reproduced in *Year Book Australia* from time to time, the latest being the 1998 edition.

A chapter outlining Australia's prehistory to Federation was contained in the 1991 and earlier Year Books.

## Parliamentary government

### Scheme of parliamentary government

Under the Australian Constitution the legislative power of the Commonwealth of Australia is vested in the Parliament of the Commonwealth,

which consists of the Queen, the Senate and the House of Representatives. The Queen is represented throughout the Commonwealth by the Governor-General. In each Australian State there is a State Governor, who is the representative of the Queen for the State. The Governor has such powers within the State as are conferred upon him/her by the Letters Patent constituting his/her office, and he/she exercises these powers in accordance with instructions issued to him/her by the Queen, detailing the manner in which his/her duties are to be fulfilled.

No Act of the Parliament of the United Kingdom passed after the commencement of the *Australia Act 1986* extends, or is deemed to extend, to the Commonwealth of Australia or to an Australian State or Territory as part of the law of the Commonwealth, of the State or of the Territory. Further, the restrictions that formerly existed on the legislative powers of the Parliaments of the States were removed by the Act.

In the Commonwealth Parliament the Upper House is known as the Senate, and in the bicameral State Parliaments as the Legislative Council. The Legislature in all States was bicameral until 1922 when the Queensland Parliament became unicameral upon the abolition of the Upper House. In the Commonwealth Parliament the Lower House is known as the House of Representatives; in the State Parliaments of New South Wales, Victoria and Western Australia as the Legislative Assembly; and in the State Parliaments of South Australia and Tasmania as the House of Assembly. The single House of Parliament in Queensland, the Northern Territory and the Australian Capital Territory is known as the Legislative Assembly. The extent of the legislative powers of each of the Parliaments is defined by the Australian and State Constitutions, respectively. In those States that have a bicameral legislature, the Legislative Assembly or House of Assembly, as the case may be, is the larger House.

The members of the Parliaments of each State are elected by the people, the franchise extending to Australian citizens who are at least 18 and possess certain residential qualifications. For the Commonwealth Parliament, the qualifications for the franchise are identical for both Houses, extending to Australian citizens (and British subjects on the electoral roll on 25 January 1984) who are 18 or older. See also the later section *Qualifications for membership and for franchise*.

## The Sovereign

On 7 February 1952, the then Governor-General of the Commonwealth of Australia, acting with advice of members of the Federal Executive Council, proclaimed Princess Elizabeth as 'Queen Elizabeth the Second, Queen of this Realm and of all Her other Realms and Territories, Head of the Commonwealth, Defender of the Faith, Supreme Liege Lady in and over the Commonwealth of Australia'. By the *Royal Style and Titles Act 1973*, which Her Majesty assented to in Canberra on 19 October 1973, the Commonwealth Parliament assented to the adoption by Her Majesty, for use in relation to Australia and its Territories, of the Style and Titles set out in the Schedule to that Act. On the same day, also in Canberra, Her Majesty issued a Proclamation, under the Great Seal of Australia, appointing and declaring that Her Majesty's Style and Titles should henceforth be, in relation to Australia and its Territories, 'Elizabeth the Second, by the Grace of God Queen of Australia and Her other Realms and Territories, Head of the Commonwealth'.

## The Governor-General

### Powers and functions

Under the Australian Constitution, the Governor-General exercises the executive power of the Commonwealth of Australia, and certain other powers and functions conferred by the Constitution that include, among others, the powers to appoint times for holding the sessions of the Parliament, to prorogue Parliament, and to dissolve the House of Representatives; to cause writs to be issued for general elections of members of the House of Representatives; to assent in the Queen's name to a proposed law passed by both Houses of the Parliament; to choose and summon Executive Councillors, who hold office during the Governor-General's pleasure; and to appoint Ministers of State for the Commonwealth of Australia. In addition, the Governor-General, as the Queen's representative, is Commander-in-Chief of the Defence Forces.

Many Acts of the Commonwealth Parliament provide that the Governor-General may make regulations to give effect to the Acts. The Governor-General may also be authorised by statute to issue proclamations, for example, to declare an Act in force. The Governor-General has been given power by statute to legislate for certain of the Australian Territories. Under the provisions of the Constitution, as well as by the conventions

of responsible government in British Commonwealth countries, the Governor-General's executive functions are exercised on the advice of Ministers of State.

### Holders of office

The present Governor-General is His Excellency the Honourable Sir William Patrick Deane, AC, KBE. Those persons who have held the office of Governor-General from the inception of the Commonwealth of Australia until 1988 are pictured in *Year Book Australia, 1988*.

### Administrators

In addition to the holders of the office of Governor-General, certain persons have, from time to time, been appointed by the Queen to administer the Government of the Commonwealth of Australia. These persons are appointed in the event of the death, incapacity, removal from office or absence from Australia of the Governor-General.

## Governors of the States

### Powers and functions

The Queen is represented in each of the Australian States by a Governor, the office having been constituted by Letters Patent issued under the Great Seal of the United Kingdom on various dates. The Governors of the States exercise prerogative powers conferred on them by these Letters Patent, their commissions of appointment and the Governor's Instructions given to them under the Royal Sign Manual and Signet or other instrument, as specified in the Letters Patent. In addition, they have been invested with various statutory functions by State Constitutions and the Commonwealth *Australia Act 1986*, as well as under the Acts of the Parliaments of the States.

A Governor of a State assents in the Queen's name to Bills passed by the Parliament of the State. Since the enactment of the *Australia Act 1986*, an Act of Parliament of a State that has been assented to by the Governor of the State is no longer subject to disallowance by the Queen or suspension pending signification of the Queen's pleasure. The Governor administers the prerogative of mercy by the reprieve or pardon of criminal offenders within his/her jurisdiction, and may remit fines and penalties due to the Crown in right of the State. In the performance of his/her functions generally, particularly those conferred by statute, the Governor of a State acts on the advice of Ministers of State for that State.

## 2.1 STATE GOVERNORS, Holders of Office—October 1998

State/Territory	State Governors
New South Wales	His Excellency the Honourable Gordon Samuels, AC, QC
Victoria	His Excellency the Honourable Sir James Augustine Gobbo, AC, QC
Queensland	His Excellency Major-General Peter Arnison, AO
South Australia	His Excellency Sir Eric James Neal, AC, CVO
Western Australia	His Excellency Major-General Philip Michael Jeffery, AC, MC
Tasmania	His Excellency the Honourable Sir Guy Stephen Montague Green, AC, KBE
Northern Territory(a)	His Honour the Administrator Dr Neil Raymond Conn, AO

(a) Administrator of the Northern Territory.

Source: Department of the Parliamentary Library.

### Holders of office

Table 2.1 shows the Governors of the States at October 1998.

## Commonwealth government

### Commonwealth Parliaments and Ministries

#### How are governments formed?

Under our political system at the Federal level, the Ministry must have the confidence of the House of Representatives. For that reason, the Prime Minister is also the leader of the party or coalition of parties holding a majority of the seats in the House, and Ministers are members of the same party or coalition. In most cases, new governments are formed after general elections have been held to determine the composition of the House, but a new government could also be formed on any occasion between elections if the majority party changes its leader, or loses its majority (e.g. as a result of a by-election), or is defeated in an important vote in the House through the defection of backbench members of the party. Reshuffles of the Ministry may occur at any time between elections; in that case there is no spill of all positions such as occurs in the formation of a new ministry.

After an election, the Governor-General sends for the leader of the party or coalition which has secured a majority in the House of Representatives and commissions that person to form a government. The incoming Prime Minister then goes about the process of finding members of his or her parliamentary party or coalition to serve as Ministers in the Government.

### The role of Parliament

Parliament has four important functions: to provide for the formation of a government; to legislate; to provide a forum for popular representation; and to scrutinise the actions of government.

The formation of a government is the most important outcome of a general election. Either the Government is returned, by virtue of retaining a majority of seats in the House of Representatives, or the opposition party or coalition of parties wins a majority, resulting in the formation of a new government.

More than half of Parliament's time is taken up with the consideration of proposed legislation. Between 150 and 250 bills are passed each year. Most bills are not contentious, being 'machinery' legislation necessary for the orderly processes of government. A great many bills are amendment bills, proposing alterations to existing legislation. Most of the bills are government bills, the policies originating in Cabinet or in government departments and composed by parliamentary drafters. Parliamentary deliberation frequently results in amendments to the proposed legislation, often as a result of representations to Senators and Members by those affected by the legislation.

The representation of the people is an important role of those elected to Parliament. Looking after constituents occupies a great deal of their time. The relative importance of this role may be judged by the high proportion of time spent by Members in their electorates and away from Parliament.

The public interest is served by the operations of a range of committees from each House, or joint committees, comprising both Senators and Members, which achieve a non-partisan scrutiny of government operations and conduct frequent inquiries into a range of issues.

Committees of the Parliament are established in order that its legislative, inquiry and scrutiny functions can be carried out more thoroughly and with the benefit of expert advice available to committees. The composition and procedures of committees, being reasonably flexible and informal, allow them to perform these functions better than would the Houses themselves meeting in their chambers.

### **Parliament and the executive**

The idea that Parliament ‘controls’ Ministers, as well as government policy and the departments and statutory bodies which implement these policies, is a concept which had more relevance in the nineteenth century than it does today. Stable majority party government in the twentieth century is perhaps the main reason for the decline in absolute parliamentary control and for the decline in the influence of Parliament relative to that of the Executive. Government business takes nearly half of the time of the Parliament, and Parliament’s agenda is largely determined by Cabinet decisions and the legislative timetabling requirements of Ministers. Today it is more realistic to speak of Parliament influencing or guiding the Executive, or of Parliament scrutinising the actions of executive government and recommending or pressing upon it different courses of action. This influence is exerted in many ways through the procedures of each House and through question time in each House.

Two aspects of parliamentary control over executive government are worthy of special mention. The first relates to the legislative power of the Parliament; the second to influence and control through committees of the Parliament. Government bills are debated in each House. Many questions and queries may be raised in the

House of Representatives and amendments are moved there. Because governments enjoy a majority in the House, amendments cannot be forced on government bills; whether or not they are accepted depends on the wishes of the Government.

It is a different story in the Senate, where no government has enjoyed a majority since 1981. If the Government wants legislation passed by the Senate it often has to agree to amendments proposed by the Opposition and minor parties. The Senate is far more active than the House in sending proposed legislation to committees.

Parliamentary influence over executive government takes various forms. At one level the close interest in and scrutiny of proceedings in the House of Representatives means that, although party discipline will ultimately protect the Executive on the floor of the House, Members of the House are able to exert powerful but often indirect influence on government.

Table 2.2 shows the number and duration of parliaments since Federation.

Table 2.3 shows the name of each Commonwealth Government Ministry to hold office since 1 January 1901 and the dates of its term of office.

In *Year Book Australia, 1924* the names are given of each Ministry up to the Bruce–Page Ministry together with the names of the successive holders of portfolios therein. *Year Book Australia, 1953* contains a list which covers the period between 9 February 1923, the date on which the Bruce–Page Ministry assumed power, and 31 July 1951, showing the names of all persons who held office in each Ministry during that period. The names of members of subsequent Ministries are listed in issues of *Year Book Australia, 1953* to 1975–76 inclusive, and in successive issues from 1980.

Particulars of the Second Howard Ministry are shown in table 2.4.

## 2.2 COMMONWEALTH PARLIAMENTS

Number of Parliament	Date of opening	Date of dissolution
First	9 May 1901	23 November 1903
Second	2 March 1904	5 November 1906
Third	20 February 1907	19 February 1910
Fourth	1 July 1910	23 April 1913
Fifth	9 July 1913	30 July 1914(a)
Sixth	8 October 1914	26 March 1917
Seventh	14 June 1917	3 November 1919
Eighth	26 February 1920	6 November 1922
Ninth	28 February 1923	3 October 1925
Tenth	13 January 1926	9 October 1928
Eleventh	6 February 1929	16 September 1929
Twelfth	20 November 1929	27 November 1931
Thirteenth	17 February 1932	7 August 1934
Fourteenth	23 October 1934	21 September 1937
Fifteenth	30 November 1937	27 August 1940
Sixteenth	20 November 1940	7 July 1943
Seventeenth	23 September 1943	16 August 1946
Eighteenth	6 November 1946	1 October 1949
Nineteenth	22 February 1950	19 March 1951(a)
Twentieth	12 June 1951	21 April 1954
Twenty-first	4 August 1954	4 November 1955
Twenty-second	15 February 1956	14 October 1958
Twenty-third	17 February 1959	2 November 1961
Twenty-fourth	20 February 1962	1 November 1963
Twenty-fifth	25 February 1964	31 October 1966
Twenty-sixth	21 February 1967	29 September 1969
Twenty-seventh	25 November 1969	2 November 1972
Twenty-eighth	27 February 1973	11 April 1974(a)
Twenty-ninth	9 July 1974	11 November 1975(a)
Thirtieth	17 February 1976	8 November 1977
Thirty-first	21 February 1978	19 September 1980
Thirty-second	25 November 1980	4 February 1983(a)
Thirty-third	21 April 1983	26 October 1984
Thirty-fourth	21 February 1985	5 June 1987(a)
Thirty-fifth	14 September 1987	19 February 1990
Thirty-sixth	8 May 1990	8 February 1993
Thirty-seventh	4 May 1993	29 January 1996
Thirty-eighth	30 April 1996	31 August 1998
Thirty-ninth	10 November 1998	—

(a) A dissolution of both the Senate and the House of Representatives was granted by the Governor-General under section 57 of the Constitution.

Source: *Department of the Parliamentary Library*.

## 2.3 COMMONWEALTH GOVERNMENT MINISTRIES SINCE 1901

	Ministry	Period of office
(i)	BARTON MINISTRY	1 January 1901 to 24 September 1903
(ii)	DEAKIN MINISTRY	24 September 1903 to 27 April 1904
(iii)	WATSON MINISTRY	27 April 1904 to 17 August 1904
(iv)	REID-McLEAN MINISTRY	18 August 1904 to 5 July 1905
(v)	DEAKIN MINISTRY	5 July 1905 to 13 November 1908
(vi)	FISHER MINISTRY	13 November 1908 to 2 June 1909
(vii)	DEAKIN MINISTRY	2 June 1909 to 29 April 1910
(viii)	FISHER MINISTRY	29 April 1910 to 24 June 1913
(ix)	COOK MINISTRY	24 June 1913 to 17 September 1914
(x)	FISHER MINISTRY	17 September 1914 to 27 October 1915
(xi)	HUGHES MINISTRY	27 October 1915 to 14 November 1916
(xii)	HUGHES MINISTRY	14 November 1916 to 17 February 1917
(xiii)	HUGHES MINISTRY	17 February 1917 to 8 January 1918
(xiv)	HUGHES MINISTRY	10 January 1918 to 9 February 1923
(xv)	BRUCE-PAGE MINISTRY	9 February 1923 to 22 October 1929
(xvi)	SCULLIN MINISTRY	22 October 1929 to 6 January 1932
(xvii)	LYONS MINISTRY	6 January 1932 to 7 November 1938
(xviii)	LYONS MINISTRY	7 November 1938 to 7 April 1939
(xix)	PAGE MINISTRY	7 April 1939 to 26 April 1939
(xx)	MENZIES MINISTRY	26 April 1939 to 14 March 1940
(xxi)	MENZIES MINISTRY	14 March 1940 to 28 October 1940
(xxii)	MENZIES MINISTRY	28 October 1940 to 29 August 1941
(xxiii)	FADDEN MINISTRY	29 August 1941 to 7 October 1941
(xxiv)	CURTIN MINISTRY	7 October 1941 to 21 September 1943
(xxv)	CURTIN MINISTRY	21 September 1943 to 6 July 1945
(xxvi)	FORDE MINISTRY	6 July 1945 to 13 July 1945
(xxvii)	CHIFLEY MINISTRY	13 July 1945 to 1 November 1946
(xxviii)	CHIFLEY MINISTRY	1 November 1946 to 19 December 1949
(xxix)	MENZIES MINISTRY	19 December 1949 to 11 May 1951
(xxx)	MENZIES MINISTRY	11 May 1951 to 11 January 1956
(xxxi)	MENZIES MINISTRY	11 January 1956 to 10 December 1958
(xxxii)	MENZIES MINISTRY	10 December 1958 to 18 December 1963
(xxxiii)	MENZIES MINISTRY	18 December 1963 to 26 January 1966
(xxxiv)	HOLT MINISTRY	26 January 1966 to 14 December 1966
(xxxv)	HOLT MINISTRY	14 December 1966 to 19 December 1967
(xxxvi)	McEWEN MINISTRY	19 December 1967 to 10 January 1968
(xxxvii)	GORTON MINISTRY	10 January 1968 to 28 February 1968
(xxxviii)	GORTON MINISTRY	28 February 1968 to 12 November 1969
(xxxix)	GORTON MINISTRY	12 November 1969 to 10 March 1971
(xl)	McMAHON MINISTRY	10 March 1971 to 5 December 1972
(xli)	WHITLAM MINISTRY	5 December 1972 to 19 December 1972
(xlii)	WHITLAM MINISTRY	19 December 1972 to 11 November 1975
(xliiii)	FRASER MINISTRY	11 November 1975 to 22 December 1975
(xliv)	FRASER MINISTRY	22 December 1975 to 20 December 1977
(xlv)	FRASER MINISTRY	20 December 1977 to 3 November 1980
(xlvi)	FRASER MINISTRY	3 November 1980 to 7 May 1982
(xlvii)	FRASER MINISTRY	7 May 1982 to 11 March 1983
(xlviii)	HAWKE MINISTRY	11 March 1983 to 13 December 1984
(xlix)	HAWKE MINISTRY	13 December 1984 to 24 July 1987
(l)	HAWKE MINISTRY	24 July 1987 to 4 April 1990
(li)	HAWKE MINISTRY	4 April 1990 to 20 December 1991
(lii)	KEATING MINISTRY	20 December 1991 to 24 March 1993
(liii)	KEATING MINISTRY	24 March 1993 to 11 March 1996
(liv)	HOWARD MINISTRY	11 March 1996 to 21 October 1998
(lv)	HOWARD MINISTRY	21 October 1998

Source: Department of the Parliamentary Library.



**2.4 SECOND HOWARD MINISTRY—At October 1998**

CABINET MINISTERS	
Prime Minister	The Hon. John Winston Howard, MP
Minister for Trade and Deputy Prime Minister	The Hon. Timothy Andrew Fischer, MP
Minister for Foreign Affairs	The Hon. Alexander John Gosse Downer, MP
Treasurer	The Hon. Peter Howard Costello, MP
Minister for Transport and Regional Services	The Hon. John Duncan Anderson, MP
Minister for the Environment and Heritage and Leader of the Government in the Senate	Senator the Hon. Robert Murray Hill
Minister for Communications, Information Technology and the Arts, and Deputy Leader of the Government in the Senate	Senator the Hon. Richard Kenneth Robert Alston
Minister for Employment, Workplace Relations and Small Business, and Leader of the House	The Hon. Peter Keaston Reith, MP
Minister for Family and Community Services and Minister Assisting the Prime Minister for the Status of Women	Senator the Hon. Jocelyn Margaret Newman
Minister for Defence	The Hon. John Colinton Moore, MP
Minister for Health and Aged Care	The Hon. Dr Michael Richard Lewis Wooldridge, MP
Minister for Finance and Administration	The Hon. John Joseph Fahey, MP
Minister for Education, Training and Youth Affairs, Vice-President of the Executive Council and Minister Assisting the Prime Minister for the Public Service	The Hon. Dr David Alistair Kemp, MP
Minister for Industry, Science and Resources	The Hon. Nicholas Hugh Minchin, MP
Attorney-General	The Hon. Daryl Robert Williams, AM, QC, MP
Minister for Agriculture, Fisheries and Forestry	The Hon. Mark Anthony James Vaile, MP
Minister for Immigration and Multicultural Affairs and Minister Assisting the Prime Minister for Reconciliation	The Hon. Philip Maxwell Ruddock, MP
OUTER MINISTRY	
Minister for Aboriginal and Torres Strait Islander Affairs	Senator the Hon. John Joseph Herron
Minister for Forestry and Conservation, and Minister Assisting the Prime Minister	Mr Charles Wilson Tuckey, MP
Assistant Treasurer	Senator the Hon. Rod Kemp
Minister for Financial Services and Regulation	Mr Joseph Benedict Hockey, MP
Minister for Regional Services, Territories and Local Government	Senator the Hon. Ian Douglas Macdonald
Minister for the Arts and the Centenary of Federation, and Deputy Leader of the House	The Hon. Peter John McGauran, MP
Minister for Employment Services	The Hon. Anthony John Abbott, MP
Minister for Community Services	The Hon. Warren Errol Truss, MP
Minister Assisting the Minister for Defence, and Minister for Veterans' Affairs	The Hon. Bruce Craig Scott, MP
Minister for Aged Care	The Hon. Bronwyn Kathleen Bishop, MP
Special Minister of State	Senator the Hon. Christopher Martin Ellison
Minister for Sport and Tourism and Minister Assisting the Prime Minister for the Sydney 2000 Games	Miss Jacqueline Marie Kelly, MP
Minister for Justice and Customs	Senator the Hon. Amanda Eloise Vanstone
Parliamentary Secretary (Cabinet) to the Prime Minister	Senator William Heffernan
Parliamentary Secretary to the Minister for Trade	Mr Lawrence James Anthony, MP
Parliamentary Secretary to the Minister for Foreign Affairs	The Hon. Kathryn Jean Sullivan, MP
Parliamentary Secretary to the Minister for the Environment and Heritage	Mrs Sharman Nancy Stone, MP
Parliamentary Secretary to the Minister for Communications, Information Technology and the Arts, and Manager of Government Business in the Senate	Senator the Hon. Ian Gordon Campbell
Parliamentary Secretary to the Minister for Defence	Senator Eric Abetz
Parliamentary Secretary to the Minister for Health and Aged Care	Senator the Hon. Grant Ernest John Tambling
Parliamentary Secretary to the Minister for Finance and Administration	Mr Peter Neil Slipper, MP
Parliamentary Secretary to the Minister for Education, Training and Youth Affairs	The Hon. Patricia Mary Worth, MP
Parliamentary Secretary to the Minister for Industry, Science and Resources	Mr Warren George Entsch, MP
Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry	Senator the Hon. Judith Mary Troeth
Parliamentary Secretary to the Minister for Immigration and Multicultural Affairs	Senator Kay Christine Lesley Patterson

Source: Department of the Parliamentary Library.

## Leader of the Opposition

The Hon. K.C. Beazley, MP (Australian Labor Party) is the leader of the Opposition.

## State of the parties in the Commonwealth Parliament

The state of the parties in the Commonwealth Parliament at October 1998 is set out in table 2.5.

**2.5 STATE OF THE PARTIES, Commonwealth Parliament—As at October 1998**

	no.
House of Representatives	
Australian Labor Party	67
Liberal Party	64
National Party	16
Independent	1
Senate	
Australian Labor Party	28
Liberal Party	31
Australian Democrats	7
National Party	5
Country Liberal Party	1
The Greens	2
Independent	2

Source: Department of the Parliamentary Library.

## Numbers and salaries of Commonwealth Government Ministers

Under sections 65 and 66, respectively, of the Australian Constitution the number of Ministers of State was not to exceed seven, and the annual sum payable for their salaries was not to exceed £12,000, each provision to operate until the Parliament otherwise provides.

Subsequently, the number of Ministers and their salaries have increased from time to time. As at October 1998, the number of Ministers was 28 and ministerial salaries ranged from \$123,309 for the Prime Minister, to \$80,009 for the Deputy Prime Minister, \$65,209 for the Treasurer and for the Leader of the Government in the Senate, \$57,869 for the Leader of the House, \$53,919 for a Minister in the Cabinet and \$43,136 for Ministers not in the Cabinet. Where more than one office is held only one ministerial salary is payable, that being the higher salary.

All amounts shown above are in addition to the parliamentary salaries and allowances shown below.

## Parliamentary salaries and allowances

The basic salary payable to a Senator or Member of the House of Representatives was \$81,856 at August 1998. In addition, Senators or Members receive an electoral allowance of \$26,467 in the case of a Senator or a Member representing an electorate of less than 2,000 km<sup>2</sup>, \$31,473 in the case of a Member representing an electorate of 2,000 km<sup>2</sup> or more but less than 5,000 km<sup>2</sup>, or \$38,380 in the case of a Member representing an electorate of 5,000 km<sup>2</sup> or more.

## Parliament and elections Commonwealth Parliament

### Qualifications for membership and for franchise

Any Australian citizen, 18 or over who is, or is qualified to become, an elector of the Commonwealth Parliament is qualified for membership of either house of the Commonwealth Parliament.

Any Australian citizen (or British subject who was on the Commonwealth Roll as at 25 January 1984) over 18 is qualified to enrol and vote at federal elections. Residence in a subdivision for a period of one month before enrolment is necessary to enable a qualified person to enrol. Enrolment and voting are compulsory for all eligible persons.

The principal reasons for disqualification of persons otherwise eligible for election as members of either Commonwealth House are: membership of the other House; allegiance to a foreign power; being attainted of treason; being convicted and under sentence for any offence punishable by imprisonment for one year or longer; being an undischarged bankrupt or insolvent; holding an office of profit under the Crown (with certain exceptions); or having a pecuniary interest in any agreement with the public service of the Commonwealth except as a member of an incorporated company of more than 25 persons.

Persons convicted of treason and not pardoned, or convicted and under sentence for any offence punishable by imprisonment for five years or longer, or of unsound mind, or persons who are holders of temporary entry permits under the *Migration Act 1958* or who are prohibited non-citizens under that Act, are excluded from enrolment and voting.



## Representation and elections

From the establishment of the Commonwealth of Australia until 1949 the Senate consisted of 36 members, six being returned by each of the original federating States. The Australian Constitution empowers the Commonwealth Parliament to increase or decrease the size of the Parliament. As the population of Australia had more than doubled since its inception, the Parliament passed the *Representation Act 1948*. This Act provided that there should be ten Senators from each State instead of six, thus increasing the total to 60 Senators, enlarging both Houses of Parliament and providing a representation ratio nearer to the proportion which existed at Federation. The *Representation Act 1983* further provided for 12 Senators for each State from the first meeting of the thirty-fourth Parliament.

The *Senate (Representation of Territories) Act 1973* made provision for two Senators to be elected from both the Northern Territory and the Australian Capital Territory. Elections for the Territory Senators are held at the same time as general elections for the House of Representatives.

In accordance with the Constitution, the total number of State Members of the House of Representatives must be as nearly as practicable twice the total number of State Senators. Consequent upon the increase in the size of the Senate in 1949, the number of State Members was increased from 74 to 121. In 1955, there were 122 State Members; in 1969, 123; in 1974, 124; in 1977, 121; in 1980, 122. From the first meeting of the thirty-fourth Parliament, there was a further increase of 23 to 145 State Members flowing from the increase in the number of State Senators to 72.

Since the redistribution of electorates in 1949 giving effect to the increase in the size of the House of Representatives, further redistributions have taken place in 1955, 1968, 1974 (Western Australia only), 1977, 1979 (Western Australia only), 1984, when the size of the Parliament was increased again, 1988–89 (Victoria and Western Australia only), 1991 (New South Wales, Queensland, South Australia, Tasmania and the Australian Capital Territory), 1994 (Victoria, Queensland and the Australian Capital Territory) and 1997 (Queensland, Western Australia and the Australian Capital Territory). Redistributions must be held whenever the representation

entitlement of a State changes, when more than one-third of the electorates in a State deviate from the quota by more than 10% for more than two months, or every seven years. The quota (or average number) of electors is the basis for electoral distribution. There may be a deviation from the quota of up to 10% in order to achieve equality of enrolment midway between redistributions. In determining boundaries, Redistribution Committees take account of economic, social and regional interests, means of communication and travel, the trend of population changes, physical features and area, and the existing boundaries of electoral divisions.

The Electoral Commissioner determines the representation entitlements of the States and Territories during the tenth month after the first meeting of a new House of Representatives. Determinations are based on the latest population statistics as provided by the Australian Statistician. The quota is ascertained by dividing the number of people of the Commonwealth by twice the number of Senators representing the States. The population of the Territories and all Senators representing the Territories are excluded from calculation when determining the quota. The population of each State and Territory is then divided by the quota to determine their representation entitlements. If there is a remaining fraction of over half a quota, the State or Territory is entitled to an additional seat. This accounts for the minor fluctuations in the size of the House of Representatives. The representation entitlements of the States and Territories at the most recent determinations are shown in table 2.6, which also shows the total size of the Parliament. Under section 24 of the Constitution, Tasmania remains entitled to the five seats guaranteed to any original State in 1901.

From 1922 to 1968, the Northern Territory was represented in a limited capacity by one member in the House of Representatives. In May 1968, the *Northern Territory Representation Act 1922* was amended to give full voting rights to the Member for the Northern Territory effective from 15 May 1968, the day on which the Act received Royal assent.

First preference votes cast for the major political parties in each State and Territory at the 1996 election for each House of the Commonwealth Parliament, and the numbers of electors enrolled, are shown in tables 2.7 and 2.8 respectively.

## 2.6 REPRESENTATION ENTITLEMENTS, States and Territories

State/Territory	1981	1984	1988	1991	1994	1997
New South Wales	43	51	51	50	50	50
Victoria	33	39	38	38	37	37
Queensland	19	24	24	25	26	27
South Australia	11	13	13	12	12	12
Western Australia	11	13	14	14	14	14
Tasmania	5	5	5	5	5	5
Northern Territory	1	1	1	1	1	1
Australian Capital Territory	2	2	2	2	3	2
<b>Total Parliament</b>	<b>125</b>	<b>148</b>	<b>148</b>	<b>147</b>	<b>148</b>	<b>148</b>

Source: Department of the Parliamentary Library.

## 2.7 COMMONWEALTH PARLIAMENTARY ELECTIONS, Votes Recorded—3 October 1998

HOUSE OF REPRESENTATIVES					
	NSW(a)	Vic.	Qld	SA	
First preference votes					
Australian Labor Party	1 457 580	1 261 288	719 739	319 267	
Liberal Party	1 131 545	1 053 990	615 153	389 382	
National Party	293 126	77 385	199 186	4 796	
Country Liberal Party	—	—	—	—	
Pauline Hanson's One Nation	322 044	105 810	285 999	90 773	
Australian Democrats	148 889	171 082	80 005	93 905	
The Greens	92 682	59 383	47 443	4 576	
Unity — Say No to Hanson	57 666	29 265	—	—	
Christian Democratic Party	36 225	3 793	11 243	3 521	
Others	106 164	80 687	34 622	19 771	
Formal votes	3 645 921	2 842 683	1 993 390	925 991	
Informal votes	151 512	103 534	68 644	44 074	
<i>Total votes recorded</i>	<i>3 797 433</i>	<i>2 946 217</i>	<i>2 062 034</i>	<i>970 065</i>	
	WA	Tas.	NT	ACT	Aust.
First preference votes					
Australian Labor Party	377 538	150 384	38 469	98 588	4 422 853
Liberal Party	397 820	117 377	—	59 424	3 764 691
National Party	13 594	—	—	—	588 087
Country Liberal Party	—	—	36 014	—	36 014
Pauline Hanson's One Nation	96 708	7 553	7 401	9 895	926 183
Australian Democrats	41 364	10 024	4 658	14 394	564 321
The Greens	52 674	17 091	2 753	8 145	284 747
Unity — Say No to Hanson	321	—	—	—	87 252
Christian Democratic Party	8 335	—	—	—	63 117
Others	54 395	5 048	1 642	4 237	306 566
Formal votes	1 042 749	307 477	90 937	194 683	11 043 831
Informal votes	45 501	9 819	3 951	5 743	432 778
<i>Total votes recorded</i>	<i>1 088 250</i>	<i>317 296</i>	<i>94 888</i>	<i>200 426</i>	<i>11 476 609</i>

...continued

**2.7 COMMONWEALTH PARLIAMENTARY ELECTIONS, Votes Recorded—3 October 1998—continued**

SENATE					
	NSW(a)	Vic.	Qld	SA	
First preference votes					
Australian Labor Party	1 452 560	1 151 293	654 623	303 290	
Liberal-National Party	1 375 563	1 076 841	—	—	
Liberal Party	—	—	570 692	383 630	
National Party	—	—	190 662	4 445	
Country Liberal Party	—	—	—	—	
Pauline Hanson's One Nation	361 009	117 039	297 245	91 907	
Australian Democrats	275 910	379 806	156 451	117 618	
The Greens	81 612	70 736	42 264	20 895	
Christian Democratic Party	58 079	13 948	28 826	9 598	
Unity—Say No to Hanson	61 607	20 598	9 487	—	
Senator Harradine Group	—	—	—	—	
Others	89 385	110 988	53 460	15 436	
Formal vote	3 755 725	2 841 249	2 003 710	946 819	
Informal votes	128 608	111 486	62 754	27 424	
<i>Total votes recorded</i>	<i>3 884 333</i>	<i>2 952 735</i>	<i>2 066 464</i>	<i>974 243</i>	
	WA	Tas.	NT	ACT	Aust.
First preference votes					
Australian Labor Party	368 821	128 377	38 259	83 867	4 181 090
Liberal-National Party	—	—	—	—	2 452 404
Liberal Party	408 696	104 268	—	61 385	1 528 671
National Party	13 428	—	—	—	208 535
Country Liberal Party	—	—	36 063	—	36 063
Pauline Hanson's One Nation	110 231	11 655	8 657	9 621	1 007 364
Australian Democrats	68 057	12 107	5 119	32 833	947 901
The Greens	61 029	17 905	4 232	6 385	305 058
Christian Democratic Party	10 258	945	—	—	121 654
Unity—Say No to Hanson	2 270	—	—	—	93 962
Senator Harradine Group	—	24 254	—	—	24 254
Other	21 021	8 866	672	2 944	302 772
Formal votes	1 063 811	308 377	93 002	197 035	11 209 728
Informal votes	29 352	9 704	1 901	3 952	375 181
<i>Total votes recorded</i>	<i>1 093 163</i>	<i>318 081</i>	<i>94 903</i>	<i>200 987</i>	<i>11 584 909</i>

(a) Excludes results in the electoral division of Newcastle.

Source: Department of the Parliamentary Library.

**2.8 COMMONWEALTH PARLIAMENTARY ELECTIONS, Electors Enrolled—3 October 1998**

State/Territory	no.
New South Wales	4 031 749
Victoria	3 056 887
Queensland	2 177 556
South Australia	1 006 398
Western Australia	1 140 845
Tasmania	329 751
Northern Territory	104 755
Australian Capital Territory	208 684
<b>Australia</b>	<b>12 056 625</b>

Source: Department of the Parliamentary Library.

From 1948 to 1967, the Australian Capital Territory was represented in a limited capacity by one member in the House of Representatives. The Member for the Australian Capital Territory was granted full voting rights on 21 February 1967.

Following the passing of the *Australian Capital Territory Representation (House of Representatives) Act 1973*, the Australian Capital Territory was divided into two electoral divisions.

Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. At elections for Senators, the whole State constitutes the electorate. For the purpose of elections for the House of Representatives, the State is divided into single electorates corresponding in number to the number of members to which the State is entitled.

In 1948, amendments to the *Commonwealth Electoral Act 1918* changed the system of scrutiny and counting of votes in Senate elections from the alternative vote to that of proportional representation. The method of voting for both the Senate and the House of Representatives is preferential.

Particulars of voting at Senate elections and elections for the House of Representatives up to 1996 appear in earlier issues of *Year Book Australia*. Full details are contained in the Election Statistics issued by the Electoral Commissioner following each election.

## Referendums

In accordance with Section 128 of the Constitution, any proposed law for the alteration of the Constitution, in addition to being passed by an absolute majority of each House of Parliament, (except in circumstances specified in Section 128 of the Constitution which permits a referendum to proceed if passed by only one chamber), must be submitted to a referendum of the electors in each State and Territory, and must be approved by a majority of the electors in a majority of the States and by a majority of all the voters who voted, before it can be presented for Royal assent.

Since 1901, 42 proposals have been submitted to referendums. The consent of the electors has been received in eight cases: the first in relation to the election of Senators in 1906, the second (1910) and third (1928) in respect of State Debts, the fourth in respect of Social Services in 1946 and the fifth in respect of Aboriginal people in 1967. The remaining three proposals, in relation respectively to Senate casual vacancies, maximum retirement age for justices of the High Court and judges of other Federal Courts, and the right of electors in the Territories to vote in referendums for the alteration of the Constitution, were approved in May 1977. In addition to referendums for alterations of the Constitution, other Commonwealth referendums have been held—two prior to Federation regarding the proposed Constitution and two regarding military service during World War I. A national song poll was held on 21 May 1977. Voting was preferential and, after the distribution of preferences, 'Advance Australia Fair' became the national song of Australia.

For further details of referendums see *Year Book Australia*, 1966, pages 66–68, *Year Book Australia*, 1974, pages 90–91, *Year Book Australia*, 1977–78, pages 72–73 and *Year Book Australia*, 1986, pages 55–56.

## The States and Territories

This section contains summarised information in tables 2.9, 2.10 and 2.11. Readers wanting greater detail should refer to the State Year Books or Territory In Focus publications.

### 2.9 GOVERNMENT LEADERS, States and Territories—October 1998

State/Territory	Government Leader
New South Wales	The Hon. R. J. Carr, MP (ALP)
Victoria	The Hon. J. G. Kennett, MP (LP)
Queensland	The Hon. P. Beattie, MLA (ALP)
South Australia	The Hon. J.W. Olsen, MP (LP)
Western Australia	The Hon. R. Court, MLA (LP)
Tasmania	The Hon. T. M. Rundle MLA (LP)
Northern Territory	The Hon. S. L. Stone MLA (CLP)
Australian Capital Territory	The Hon. K. Carnell, MLA (LP)

Source: Department of the Parliamentary Library.

### 2.10 OPPOSITION LEADERS, States and Territories—October 1998

State/Territory	Opposition Leader
New South Wales	The Hon. P. Collins, MP (LP)
Victoria	J. M. Brumby, MP (ALP)
Queensland	The Hon. R.E. Borbidge, MLA (NP)
South Australia	The Hon. M. Rann, MP (ALP)
Western Australia	G.I.D. Gallop, MP (ALP)
Tasmania	The Hon. J.A. Bacon, MHA (ALP)
Northern Territory	M. A. Hickey MLA (ALP)
Australian Capital Territory	J. Stanhope MLA (ALP)

Source: Department of the Parliamentary Library.

### 2.11 STATE OF THE PARTIES, States and Territories—October 1998

	No. of seats
NEW SOUTH WALES	
Legislative Assembly	
Australian Labor Party	51
Liberal Party	29
National Party of Australia	16
Independent	3
Legislative Council	
Australian Labor Party	16
Liberal Party	11
National Party of Australia	6
Independent	7
Australian Democrats	1
The Greens	1
VICTORIA	
Legislative Assembly	
Australian Labor Party	29
Liberal Party	48
National Party of Australia	9
Independent	2
Legislative Council	
Australian Labor Party	10
Liberal Party	28
National Party of Australia	6

...continued

### 2.11 STATE OF THE PARTIES, States and Territories—October 1998—continued

	No. of seats
<b>QUEENSLAND</b>	
Legislative Assembly	
Australian Labor Party	44
National Party of Australia	23
Pauline Hanson's One Nation	11
Liberal Party	9
Independent	2
<b>SOUTH AUSTRALIA</b>	
House of Assembly	
Australian Labor Party	21
Liberal Party	23
National Party of Australia	1
Independent	2
Legislative Council	
Australian Labor Party	8
Liberal Party	10
Australian Democrats	3
Independent	1
<b>WESTERN AUSTRALIA</b>	
Legislative Assembly	
Australian Labor Party	19
Liberal Party	29
National Party of Australia	6
Independent	3
Legislative Council	
Australian Labor Party	12
Liberal Party	14
National Party of Australia	3
Australian Democrats	2
The Greens	3
<b>TASMANIA</b>	
House of Assembly	
Australian Labor Party	14
Liberal Party	16
Tasmanian Greens	4
Independent	1
Legislative Council	
Australian Labor Party	3
Liberal Party	1
Independent	14
<b>NORTHERN TERRITORY</b>	
Legislative Assembly	
Australian Labor Party	7
Country Liberal Party	18
Independent	0
<b>AUSTRALIAN CAPITAL TERRITORY</b>	
Legislative Assembly	
Australian Labor Party	6
Liberal Party	7
ACT Greens	1
Independent	3

Source: Department of the Parliamentary Library.

## Acts of the Parliaments

In the Commonwealth Parliament all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Australian Constitution.

In all States, other than South Australia and Tasmania, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council (except in Queensland) and Legislative Assembly. In South Australia and Tasmania laws are enacted in the name of the Governor of the State, with the advice and consent of the Parliament in the case of South Australia, and of the Legislative Council and House of Assembly in the case of Tasmania. Generally, assent to bills passed by the Legislatures is given by the Governor-General or State Governor acting on behalf of, and in the name of, the Sovereign. In certain special cases bills are reserved for Royal assent. The Parliaments of the States are empowered generally, subject to the Australian Constitution, to make laws in and for their respective States in all cases. The power of the States to make laws was enhanced in 1986 by the enactment by the Commonwealth Parliament of the *Australia Act 1986* and the accompanying *Australia (Request and Consent) Act 1986*. Subject to certain limitations they may alter, repeal or vary their Constitutions. Where a law of a State is inconsistent with a law of the Commonwealth Parliament, the latter law prevails and the former law is, to the extent of the inconsistency, invalid.

## Enactment of legislation by the Commonwealth Parliament

The legislation passed by the Commonwealth Parliament between 1901 and 1973, and which was then still in operation, was published in a consolidated form entitled *Acts of the Parliament 1901–73*. Since 1974, annual volumes of Acts have also been published. The consolidation contains a chronological table of Acts passed from 1901 to 1973, showing how they are affected by subsequent legislation or lapse of time, together with a table of legislation of the Commonwealth Parliament passed between 1901 and 1973 in relation to the several provisions of the Australian Constitution. Reference should be made to these for complete information.

In 1997, the number of enactments of the Commonwealth Parliament was 222.

## National Anthem and colours of Australia

His Excellency, the Governor-General of the Commonwealth of Australia, issued the following Proclamation on 19 April 1984:

I, SIR NINIAN MARTIN STEPHEN,  
Governor-General of the Commonwealth of Australia, acting with the advice of the Federal Executive Council, hereby declare:

(a) that the anthem 'God Save The Queen' shall henceforth be known as the Royal Anthem and be used in the presence of Her Majesty The Queen or a member of the Royal Family;

(b) that the National Anthem shall consist of the tune known as 'Advance Australia Fair' with the following words:

*Australians all let us rejoice,  
For we are young and free,  
We've golden soil and wealth for toil;  
Our home is girt by sea;  
Our land abounds in nature's gifts  
Of beauty rich and rare,  
In history's page, let every stage  
Advance Australia Fair.  
In joyful strains then let us sing,  
Advance Australia Fair.*

*Beneath our radiant Southern Cross  
We'll toil with hearts and hands;  
To make this Commonwealth of ours  
Renowned of all the lands;  
For those who've come across the seas  
We've boundless plains to share;  
With courage let us all combine  
To Advance Australia Fair.  
In joyful strains then let us sing,  
Advance Australia Fair.*

(c) that the Vice-Regal Salute to be used in the presence of His Excellency the Governor-General shall consist of the first four bars and the last four bars of the tune known as Advance Australia Fair;

(d) that the National Anthem shall be used on all official and ceremonial occasions, other than occasions on which either the Royal Anthem or the Vice-Regal Salute is used; and

(e) that green and gold (Pantone Matching System numbers 116C and 348C as used for printing on paper) shall be the national colours of Australia for use on all occasions on which such colours are customarily used.

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# 3

# International relations

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## Introduction

International relations are increasingly important for Australia. This reflects the international and domestic changes that have linked Australia even more closely to other countries. It also reflects the broader scope of international relations: many of the issues and policies that were previously domestic now have significant international dimensions. Therefore Australia's international relations, while still dominated by policy issues related to foreign affairs, trade and security, increasingly include issues related to sectors such as education, tourism, transport and communications.

Australia's international relations are driven by its core national interests—the security of the Australian nation and the economic wellbeing of the Australian people. However, these priorities are not the exclusive focus of Australia's foreign and trade policy. Pursuit of Australia's national objectives also reflects the aspirations and values of a liberal and vigorous democracy. Australia acts as a responsible member of the international community, committed to the rule of law, ready to assist in cases of humanitarian need and active as a constructive contributor to the economic development of the region.

Among the important elements of Australia's international relations are the priority accorded to the Asia Pacific, and especially to the countries of East Asia, the forging of close relationships with the United States, Japan, Indonesia and China, the commitment to further trade liberalisation, and strong support for the World Trade Organization (WTO) and Asia Pacific Economic Cooperation (APEC).

However, Australia has global interests which require broad international engagement, and the priority Australia attaches to its relationships with the countries of the Asia Pacific does not diminish the important interests Australia must pursue in the Americas, Europe and elsewhere.

In addition to maintaining and developing strong bilateral relationships, Australia's international relations are promoted through participation in regional or global institutions and forums. For example, Australia has a strong national interest in ensuring that nuclear weapons do not proliferate, especially in the Asia Pacific region. It has therefore been active in both global and regional arenas in support of the development of

and adherence to international non-proliferation and disarmament regimes. Multilateral trade agreements enhance access to foreign markets for Australian products.

Australia's first White Paper on Foreign and Trade Policy, *In the National Interest*, was released by the Australian Government in August 1997. The White Paper set out the principles and priorities of the Government's foreign affairs and trade policy, and examined the key international challenges Australia will face over the next 15 years. It identified globalisation and the continuing economic rise of East Asia as the two most profound influences on Australian foreign and trade policy over that period.

Globalisation offers opportunities for internationally competitive economies, but also brings challenges for political and economic management. It has profound implications for trade and economic policy. It blurs the division between foreign and domestic policy, increases competitive pressures in markets, and makes globally-based trade rules and disciplines even more important.

Notwithstanding the economic difficulties already being experienced in East Asia when the White Paper was tabled, the judgement was that the underlying strengths of East Asia would see growth over the period to 2010. In such circumstances, the countries of East Asia will grow in importance to Australia as trade and investment partners and in security terms.

The White Paper identified China's economic growth, with attendant confidence and enhanced influence, as the most important strategic development in the period ahead. How China manages its economic growth and pursues its international objectives, and how other nations, particularly the United States and Japan, respond to China, will be particularly important.

The United States will remain, for the foreseeable future, the most powerful country in the world, with the largest economy and the most advanced technology. The United States is likely to maintain its strategic engagement in East Asia, where it has vital security and economic interests. The relationships among the United States, Japan and China will be key determinants of regional stability. The growth in economic and political influence of others in East Asia, notably the Republic of Korea and Indonesia, is also likely to affect the dynamics of regional security.

## Security interests

Australia's national security and its economic interests are inextricably linked to the security and stability of a broad region which encompasses South East Asia, the South West Pacific and the Eastern Indian Ocean. It also includes North East Asia, because the security of South East Asia cannot be separated from the rest of East Asia and because of the direct consequences of instability in North East Asia for Australia's wellbeing. Any threat to the security of East Asia—from tensions to the extreme of war—would have immediate and adverse effects on Australia's national security and our trade with major export markets. The potential for developments in the Asia Pacific to impact on Australia's security and economic interests is the basis for the high priority Australia places on an active role in efforts to ensure regional stability, including its work to put in place and promote international security measures and regimes to underwrite regional security.

The key components of Australia's security strategy are maintaining a strong national defence capability, the security alliance with the United States, developing bilateral defence and security relationships with countries throughout the Asia Pacific, and strengthening multilateral security links in the region, especially the ASEAN (Association of South East Asian Nations) Regional Forum (ARF). Sustainable economic growth in the region is also crucial to regional stability.

Regular bilateral security dialogues with countries in the Asia Pacific, and with key partners beyond the region, are an important element in Australia's security strategies. These consultations provide an opportunity to share views on a wide range of regional and global security issues. They complement multilateral mechanisms dealing with global and regional security issues, promote transparency and reinforce Australia's commitment to working cooperatively with regional countries on security issues. Australia is expanding the number of countries with which it has such dialogues, as part of its long-term strategy of promoting shared security perceptions in the Asia Pacific region.

The ARF is an important step towards creating a sense of strategic community in a region where there is little history of inclusive multilateral approaches to security or defence. It also has an important role in encouraging regional support for international regimes against the proliferation of weapons of mass destruction and their missile delivery systems.

Australia is working in the ARF to develop norms of regional behaviour aimed at avoiding conflict and settling disputes without resort to the threat or use of force. Australia is also encouraging the ARF to take a more central role in discussing and managing issues that threaten stability or confidence, and is taking an active role in expanding the ARF's confidence-building agenda.

While Australia's strategic environment is shaped mostly by developments in the Asia Pacific region, global issues can also have significant security implications for Australia. The risk of global conflict has diminished considerably with the end of the Cold War, but other potential threats remain. Developments in Europe and the Middle East still have the potential to disrupt global security. Similarly, and of particular relevance in the wake of the nuclear tests conducted by India and Pakistan in May 1998, serious instability in other parts of Asia, such as South Asia or Central Asia, can have implications for the security of the Asia Pacific.

Australia has made a major contribution to the significant progress in establishing international regimes to prevent the proliferation of nuclear, chemical and biological weapons and of missiles, and to prohibit nuclear testing. Australia's future efforts will be concentrated on ensuring that these regimes are implemented and remain effective and, where necessary, are strengthened, especially in light of the security challenge presented by South Asian nuclear testing. Considerable effort is currently being devoted to initiatives to bolster the international legal regime against biological weapons. Australia will continue to be active in efforts to strengthen international regimes banning the use, stockpiling and transfer of anti-personnel landmines. It will also continue to support practical measures such as landmine clearance programs, assistance to victims and improved mine clearance technology to tackle the humanitarian disaster caused by landmines.

## Economic interests

Australia's economic wellbeing and growth depend on a competitive domestic economy and access to foreign markets. Trade policy, industry policy and micro-economic reform go hand in hand in providing Australian business with the competitive foundations and opportunities to thrive in an increasingly globalised marketplace.

As with Australia's security interests, Australia's economic interests are most closely engaged in the Asia Pacific region. In 1997–98, 54% of Australia's merchandise exports went to East Asian countries and 72% to APEC members, the destination also for over half of Australia's foreign direct investment. The East Asian market is 18 times larger than the Australian market and imports around \$US1,400b worth of merchandise each year. Accordingly, although the East Asian economic crisis will result in slower economic growth for the region in the short term, East Asian markets are and will remain important for Australia.

While the East Asian economic crisis has had a negative impact on Australia's export growth to the region, the relative strength of the domestic economy, the competitive boost it received from a depreciation of the Australian dollar, and its ability to diversify its exports to markets, have prevented more serious repercussions for Australia. Australia has provided assistance—both technical and financial—to affected economies, including through contributions to the three International Monetary Fund (IMF) packages, and influencing the views and approaches of other Organisation for Economic Cooperation and Development (OECD) countries and international financial institutions in addressing country-specific problems in the region. Australia's response to the East Asian economic crisis has further underscored its position in the region and it is therefore well placed to take advantage of opportunities as the region recovers.

Australian trade policy combines an integrated set of bilateral, regional and multilateral efforts aimed at achieving the best possible market access outcomes for Australian business and advancing Australia's commercial interests. To this extent, Australia's trade strategies focus on reducing barriers to Australian goods, services and investment in foreign markets, developing those markets and promoting Australia as a supplier of goods, services and investment.

The pre-eminent regional and multilateral forums are APEC and the WTO. Other practical steps, such as developing closer links between Australia's economic relations agreement with New Zealand (Closer Economic Relations or CER) and the ASEAN Free Trade Area, are also being pursued. Over coming years, a number of challenges will require Australia to refine its trade strategy. Accession of new members to the WTO and APEC may alter these organisations' internal dynamics. Regional agreements could further fragment the global trading system. The international trade agenda will become more complex as domestic regulatory regimes and rules affecting investment are the subject of international discussions and as pressure rises to include issues such as labour standards, the environment and competition policy in international trade negotiations.

The strong Asia Pacific orientation of Australia's trade and the importance of liberalising and facilitating trade in the region help to make APEC the most significant regional forum in which Australia participates. APEC economies committed themselves, in the Declaration by Leaders in Bogor in 1994, to free and open trade and investment by 2010 for industrialised economies and by 2020 for developing economies. Australia remains committed to this goal which, if met, would bring considerable long-term benefits for Australia and the region.

Australia is working in the short and medium-term to ensure substantial progress in the liberalisation programs of individual APEC economies, by improving Individual Action Plans (for meeting the goal of the Bogor Declaration) on an annual basis. Australia has also strongly supported the program of Early Voluntary Sectoral Liberalisation (EVSL) set in train in 1997, covering 15 different sectors (including energy, food, chemicals and fish products). Attention to financial sector issues has been given added impetus in 1998 as a result of the East Asian financial turmoil. Business involvement in APEC activities not only helps ensure that APEC is tackling the key impediments to trade, investment and economic growth in the region, but can be a powerful force in encouraging APEC economies to push ahead with difficult reform decisions.

Other APEC activities aim to promote economic and technical cooperation, including cooperation in human resources development, harnessing technologies for the future, sustainable development, and infrastructure. Domestically, the Australian Government has developed a specific APEC Support Program which provides funding for small, high impact projects to help developing economies meet APEC goals.

APEC's contribution, however, goes beyond trade and investment, and economic and technical cooperation issues. It is among the strongest forces for further regional integration and so promotes strategic stability and cooperative approaches among the major powers of the Asia Pacific. It is the only forum which brings together leaders from across the Asia Pacific. These meetings contribute to habits of consultation and dialogue, and the development of personal relationships, which strengthen trust and confidence among regional countries.

Significant as the Asia Pacific is for Australian business, Australia's trading interests are global, as therefore are its trade policy and market development activities. The WTO is of particular significance to Australia because it is the major forum for global trade liberalisation and, through its rules and disciplines, provides a predictable and more transparent environment for business, and a means of resolving trade disputes. Australia is, and will continue to be, an active player in the WTO, including as an advocate for continued global market opening and as the leader of the Cairns Group of agricultural fair traders.

Over the short-term, Australia is working towards the successful and unambiguous implementation by all participants of all market opening commitments from the Uruguay Round, including further negotiations in agriculture and services, and the inclusion of all major trading countries as members of the WTO.

Over the longer-term, Australia's objectives are launching and successfully concluding further broad based multilateral trade negotiations; ensuring that the system remains relevant to the needs of Australian business by extending the rules and disciplines to new areas of importance; and seeking to make world trade in agriculture free from distortion by subsidies and domestic support, and to increase access for Australia's exports of agricultural products.

## National values

The values which Australia brings to its international relations are the values of a liberal democracy. These have been shaped by national experience and given vigour through cultural diversity, but reflect a predominantly Western intellectual and cultural heritage. They include the rule of law, freedom of the press, the accountability of the government to an elected parliament, and a commitment to a 'fair go'.

Australia's values strengthen its international relations. They enable Australia both to sustain traditional links to Europe and North America and to forge stronger ones with Asia.

A fundamental and non-negotiable tenet of Australia's national values is an unqualified commitment to racial equality and the elimination of racial discrimination. This is reflected in the country's ethnic diversity, and is a guiding principle of its international behaviour.

Human rights are an inseparable part of Australia's approach to international relations, both because the treatment of human beings is a matter of concern to Australians, and because promoting and protecting human rights underpins Australia's broader security and economic interests.

The objective of Australia's human rights policy is to make a difference on human rights. In promoting human rights, priority is given to practical efforts that can directly improve the human rights situation on the ground. These include development cooperation programs, assisting in establishing national human rights machinery, encouraging bilateral, regional and multilateral discussion of human rights issues, and working to develop and strengthen the effectiveness of regional and international human rights institutions and instruments.

In mid-1998, Australia established a Centre for Democratic Institutions at the Australian National University in Canberra, with the mission "to harness the best of Australia's democratic experience in support of developing countries' needs for good governance". The Centre's core business is to design and deliver short, intensive, high-level training programs in support of the democratic process and the strengthening of civil society.

## Australia's assets

In its international relations, Australia uses its assets—economic, strategic and cultural—as well as an international reputation as a responsible, constructive and practical country. Australia's history shows that, on issues of importance to it, Australia can exert considerable influence if it sets out to do so.

Australia is a significant economy, bigger in absolute size than all those in the Asia Pacific region except the United States, Canada, Japan, the Republic of Korea and China. It is among the world's most important commodity exporters, and a crucial supplier of industrial raw materials, energy and food.

Australia has a strong skills base, high quality education and training institutions, advanced physical infrastructure, and adoption and usage rates for information technology which are among the highest in the world. Australia has strong civil institutions which underpin a free society and encourage free enterprise. Australia's cultural diversity gives Australian society a vigour and capacity to adapt rapidly to new opportunities. It is also a rich source of language and other skills which are a significant advantage in doing business in a global economy.

Australia's defence capability is significant in regional terms. Australia has a broadly based alliance relationship with the United States, whose strategic engagement and commitment underwrite the stability of East Asia. Australia shares a close and expanding partnership with Japan, which is the most powerful economy in East Asia, and with Indonesia, the largest and most populous country in South East Asia.

This is not to suggest that Australia can afford to be complacent about its future. Over the coming years, Australia will face a much more competitive trading and investment environment, a changing strategic environment, increased competition in East Asian and other markets, continuing international resistance to further trade liberalisation, and internal uncertainties in some key regional countries.

## Australia's bilateral relationships

As a nation with global interests, Australia deals with countries in many regions. Each relationship engages Australian interests in

different ways. Each is significant, and Australia does not seek to ascribe a strict hierarchy of importance to them.

This is not to suggest that the interests Australia pursues with each country are equally important, or that Australia devotes equal resources to each of them. The countries which most substantially engage Australia's interests are those which are influential in their own right in shaping Australia's strategic environment, as well as being significant trading and investment partners. Foremost among these are the three major powers and largest economies of the Asia Pacific region—the United States, Japan and China—and Australia's largest neighbour, Indonesia. Significant Australian interests are also engaged in Australia's relationships with the Republic of Korea, the other ASEAN states and, in the South Pacific, New Zealand and Papua New Guinea.

## United States

The United States is Australia's second largest trading partner and largest source of investment. People-to-people ties, including educational and cultural links, are extensive and wide-ranging, with over 600,000 business visitors and tourists travelling between Australia and the United States each year. Australia's alliance with the United States is an asset both redefined and strengthened by the end of the Cold War. It is a central component of Australia's defence and continues to provide Australia with beneficial access to technology, military equipment and intelligence.

More broadly, Australia and the United States continue to share a strong commitment to democracy, international security and an open world trading system, as well as an interest in maintaining a strong United States presence both globally and within the Asia Pacific. The Australia–United States relationship complements and reinforces Australia's practical commitment to the Asia Pacific, and strengthens the regional engagement of the United States, an engagement which has assumed even greater importance as the Asia Pacific undergoes historic change. Australia and the United States are working together to achieve more open markets in the region through APEC and the WTO, and more effective regional security links through the ARF and the development of stronger bilateral relationships and dialogues.



## Japan

Australia and Japan enjoy a significant and wide-ranging relationship. Shared interests extend well beyond the bilateral economic relationship which is by far Australia's most substantial and successful. Despite the recent downturn in the Japanese economy, Japan remains Australia's largest export market by a considerable margin—the value of exports to Japan is more than double the value of those to the next largest market. There are still good prospects for expansion in areas such as energy, food, and housing and construction. In addition, Japan's large and affluent market continues to present opportunities for Australia as it opens to imports and diversifies. Japan is also an important source of imports (our second largest source in 1997–98) and investment. Australia also has growing people-to-people links, evident in the number of Australians studying Japanese, increasing exchanges, and the healthy level of tourism.

Australia's partnership with Japan reflects the broad alignment of Australian and Japanese strategic, political and economic interests in the Asia Pacific region. Agreement to Prime Ministerial Summits was reached in April 1997, and a Partnership Agenda endorsed at the Australia Japan Ministerial Committee meeting in August 1997. Australia and Japan both support the long-term strategic engagement of the United States in the Western Pacific and recognise the fundamental contribution that it makes to regional stability. Australia and Japan also share a core interest in advancing APEC as the primary vehicle for economic cooperation in the Asia Pacific region. Japan supports Australia's closer involvement with East Asia.

## China

Successful progress with its transition to a market economy will put China on the path to becoming one of the world's largest economies early in the next century. The world's tenth largest trading nation in 1997, China will become increasingly integrated into the world economy through multilateral and regional mechanisms like the WTO and APEC. Australia supports China's accession to the WTO on appropriate terms.

As China's economic stature grows, so too does its importance to the security and politics of the region and the world. Its relationships with the United States and Japan are critical to stability in

the Asia Pacific. China has made a positive contribution to managing the regional economic crisis, participating in IMF packages for Indonesia and Thailand.

Australia and China benefit from a substantial and expanding bilateral trade and investment relationship—China is our fifth largest trading partner. The relationship with China goes well beyond economic links, however, and includes cultural, educational, scientific and increasing people-to-people links. Australia's approach to China is based on these shared interests and mutual respect, which provide the basis for a realistic framework for the conduct of the relationship, and offer the best prospects to maximise shared economic interests and to advance Australia's political and strategic interests.

As two countries with different traditions, cultures and political systems, there will always be some issues on which Australia and China do not share the same view. Any such differences are best addressed through constructive dialogue and good communication between the two governments. The Australia–China human rights dialogue, the second annual meeting of which was held in Canberra in August 1998, is a case in point. The one-China policy will continue to be a fundamental element of the bilateral relationship, within the framework of which Australia pursues its important economic and trade relationship with Taiwan.

## Indonesia

Australia's relations with Indonesia are fundamentally important. This reflects Indonesia's strategic location astride Australia's northern approaches, its size—Indonesia is by far the largest and most populous country in Australia's immediate vicinity—and its central role in ASEAN. Australia's relationship with Indonesia is evolving to meet the challenges of the East Asian economic crisis and the period of rapid political change which Indonesia is undergoing. Australia is committed to assisting Indonesia through this difficult time, and has demonstrated this during 1997–98 by its participation in IMF packages, and bilateral trade, finance, insurance and substantial humanitarian programs. Australia continues to advocate, through frequent and high-level consultations in Jakarta and Washington, cooperative engagement between Indonesia and international financial institutions.



Notwithstanding the effect of the economic downturn on bilateral trade and investment, bilateral relations continue to encompass a wide range of technical, economic, cultural, defence and educational fields. Australia and Indonesia are active participants in regional organisations such as APEC and ARF, and maintain a range of agreements to foster bilateral cooperation. The 1995 Agreement on Maintaining Security, for example, has strengthened bilateral defence cooperation, while the agreement on the Australia–Indonesia Development Area (signed in 1997) identifies shared interests in developing the provinces of eastern Indonesia.

### The Americas

In the Americas, Australia's close historical ties with Canada are the basis for an active trade and investment relationship and close cooperation on a range of international issues. Mexico is becoming a more significant trade and investment partner as its economic growth continues and we build a stronger relationship through our common membership of forums such as APEC. The new Australia–Chile Bilateral Trade and Investment Commission provides an additional dimension to Australia's relations with South America. Australia recognises that the process of regional economic integration in the Americas can reinforce the trend toward liberalisation and economic reform of the past decade. However, Australia is also working to overcome any long term diversionary impact on trade which may arise as a result of regional integration. The dialogue between CER and Mercosur (the southern cone common market comprising Argentina, Brazil, Paraguay and Uruguay) is a useful forum to address these concerns, as well as to advance Australia's growing links with the Mercosur countries, particularly Brazil and Argentina.

### East Asia

Relations between Australia and the Republic of Korea (ROK) are productive, reflecting our complementary economic structures, shared middle-power status and common interests in the Asia Pacific region. Although exports to Korea have suffered as a result of the East Asian economic crisis, Korea remains Australia's second largest export market and fourth largest trading partner with exports in 1997–98 of \$6.4b. Notwithstanding the painful economic restructuring currently under way in Korea, Australia is confident of Korea's long-term economic potential and regards Korea as among its most important regional relationships. This

priority was underscored by the Government's pledge of \$US1b in December 1997 to the IMF Assistance package, and various measures taken to facilitate vital bilateral trade.

ASEAN is the key political institution in South East Asia and has been instrumental in promoting political harmony and economic growth in the region for more than 30 years. Australia's relations with ASEAN as a grouping, and with its members states (Brunei Darussalam, Burma, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Vietnam), are central to our engagement with the region. Over recent times ASEAN has faced a difficult set of challenges with the combined impact of the East Asian economic crisis, the fires and haze, and the political turmoil in Indonesia. It nevertheless remains an important force for stability in the region. Australia's relations with ASEAN are longstanding, and range across trade (exports to ASEAN member states for 1997–98 were \$11.5b—making ASEAN our third largest export market), investment, technical, cultural, defence and educational fields.

### Europe

Europe is important to Australia for historical, cultural and economic reasons and Australia has close ties with many European countries. Europe is one of the world's most significant centres of economic activity and a leading participant in key economic forums like the Group of Eight (G8), the OECD and the WTO. Europe is Australia's largest economic partner. It is Australia's second largest destination for outward investment. Australian exports to Europe in the year ending 30 June 1998 were \$12.7b (an increase of 35% over the previous year), while imports over the same period were \$23.4b (an increase of 11%). Australia and the countries of Europe continue to work together to meet global challenges. In this regard, a strengthening of the multilateral trading system, including the launch of a further broad-based round of multilateral trade negotiations under the auspices of the WTO, is an important shared interest.

Closer integration and enlargement of the European Union and moves to the next stage of Economic and Monetary Union are changing the face of Europe. The moves by many countries in east and central Europe to seek membership of the European Union and other European institutions are likely to result in major changes in the future development of those countries, which will have implications both for Australia's

political and economic relations with them and for the conduct of international relations across a wide range of issues of interest to Australia. The economic crisis in Russia and its difficulties in implementing fundamental reform are being felt across Europe and on global markets.

### **The Indian Ocean region**

After strong growth in bilateral relations with all South Asian countries in recent years, Australia's political and defence relations with India and Pakistan have been affected following the nuclear tests conducted by those countries in May 1998. The international community strongly condemned the tests, and Australia and other countries adopted concrete measures in response. However, other aspects of the relationship, including trade and investment, remain unaffected and there was strong growth in exports to South Asia in 1997-98.

As a member of the Indian Ocean Rim Association for Regional Cooperation, Australia is working to develop a trade policy agenda that promotes outward-looking, WTO-consistent, non-preferential trade among members. Further economic liberalisation in the region should assist Australia in maintaining strong export growth to Indian Ocean Region countries.

### **The Middle East and Africa**

Australia has significant and expanding commercial interests in the Middle East, with prospects of developing both trade and investment links. While building on its traditional commodity exports, Australia is also broadening the base of its trade into services (especially education and medicine) and manufactures. In addition, Australia remains interested in political and strategic developments in the region. Australia's most significant relationship in Africa is with South Africa. This is a growing market for Australia's commercial interests, and provides a base for trading into all the countries of the Southern African Development Community.

### **The South Pacific**

The South Pacific is an area of significant strategic interest for Australia, and Australia's relations with countries in the region are of abiding importance.

A shared background and experience and a multi-faceted relationship incline Australia naturally towards a unique partnership with New Zealand. New Zealand is an ally and Australia's fourth-largest export market, the first in

importance for exports of elaborately transformed manufactures. The successful pursuit of many Australian international interests is advanced by maintaining a mutually supportive relationship with a New Zealand which is economically strong, bilaterally and internationally engaged, and capable of playing a credible role in regional security.

Australia has a longstanding close relationship with Papua New Guinea (PNG). PNG's location gives it an enduring strategic importance to Australia. Pursuing a constructive and productive bilateral relationship is a high priority for Australia. Australia is playing a major role in the Bougainville peace process. Australia is a major supplier to and investor in PNG, although increasing competition may reduce over time Australia's overall market share of PNG's imports. Australia supports a process of sustainable economic development in PNG, aimed at enhanced self-reliance within the context of a functional and democratic state. Australia gives strong backing to PNG's continuing commitment to fiscal prudence, stable macroeconomic policies, structural adjustment, trade liberalisation and market reforms.

Australia's relations with the other states of the Pacific islands region are important. As part of the neighbourhood, these states have close historical, political, economic, aid, and community ties with Australia. Australia's international standing, especially in East Asia and in North America and Europe, is influenced by perceptions of how well Australia fulfils a leadership role in the islands region. Australia plays a significant role in trade and investment in the South Pacific and supports regional trade liberalisation. Through a wide-ranging aid program valued at \$130m per year, Australia assists island countries with economic reform, institutional strengthening and improvements to the health and education sectors.

### **The United Nations (UN) system**

Australia pursues important national interests in the bodies that comprise the UN system. These interests are engaged in the principal UN organs (the Security Council and the General Assembly) as well as specialised agencies such as the Food and Agricultural Organisation, and affiliated organisations such as the International Atomic Energy Agency.

The UN is important to Australia in the core areas of international security and disarmament, environment, human rights and development assistance. Australia plays a strong role in the these and other UN areas such as agriculture, refugees, health and meteorology. Australia has also been active in ensuring the acceptance of arms control treaties, such as the Comprehensive Test Ban Treaty, by the UN General Assembly, and in international environmental negotiations. The emphasis in the latter is on working towards international action which contributes to sustainable development while protecting Australia's national interests.

An ongoing priority for Australia is the reform of the UN so that it can effectively manage its growing demands with static or declining real resources. One element of the reform program is improved efficiency and effectiveness; the UN must undergo the fiscal discipline and adjustment to which many governments have already been subject. Another element is the need to re-examine the current group system within the UN so that it better reflects the interests of all members.

## Role of the Department of Foreign Affairs and Trade in Australia's international relations

The Department of Foreign Affairs and Trade (DFAT) is the principal source of advice to the Government on foreign and trade policy issues and is the agency primarily responsible for implementing the Government's foreign and trade policies. Its aim is "to advance the interests of Australia and Australians internationally".

Its goals are to:

- enhance Australia's security;
- promote Australia's economic growth, jobs and standard of living;
- help Australian travellers and Australians overseas;
- strengthen global cooperation in ways which advance Australia's interests;
- promote public understanding of Australia's foreign and trade policy; and
- provide clients with highly professional, efficient and effective services.

## Consular and passport services

Consular and passport services are important areas of work for DFAT. In 1997–98, the Department provided some 23,000 Australians with consular assistance overseas and in Australia, and issued over one million passports. Australia is a world leader in providing secure passport services, and the Department is

committed to working closely with the private sector to take advantage of technological developments to improve the quality of Australian passports.

Consular and passport operations are areas of increasing work as more Australians travel and live overseas. The number travelling has almost doubled in the last ten years, a trend which continues. In addition, tens of thousands of Australian citizens now work and live abroad, and this number too is likely to grow as a globalising economy facilitates the movement of skills and expertise.

The Department regards it as a fundamental duty to help Australians in need of consular assistance and has improved the range and quality of its consular services, which are now available from some 130 points of contact worldwide. Australia's network of overseas posts and honorary consuls has also been enlarged by the further development of cooperative arrangements with other countries, notably Canada. A Consular Response Group is now in place to manage very complex cases, and the introduction of a 24-hour consular operations centre in Canberra has made it much easier for travelling Australians and their families in Australia to gain prompt access to consular advice. The Department's public promotion of its consular services is leading to wider knowledge and appreciation of those services among the travelling public.

## Working with the public

The Department's interaction with the Australian community is continuing to expand beyond its daily contact on consular and passport services. This reflects the increased range of trade, economic, environmental and social issues dealt with internationally and the greater interest in international negotiations on the part of non-government organisations (NGOs) and Australian business.

The Foreign Affairs Council was established in December 1997 to provide a mechanism through which the Government can draw upon the expertise and views of a range of eminent Australians working in business, academia and the media in developing its foreign policy. The Council meets three times a year and held its first meeting in February 1998.

The Department coordinates regular meetings with NGOs and business on a range of international issues including the environment, human rights and disarmament. One example is the treaty-making process which the Australian Government reformed in 1996 to ensure greater consultation with the community during the negotiation of treaties and prior to any final action being taken.

## Australia's overseas aid program

The objective of Australia's development cooperation program is to advance Australia's national interest by assisting developing countries to reduce poverty and achieve sustainable development. In doing so, Australia's aid program plays a vital role in meeting the challenge of development and improving the lives of millions of people overseas, many of whom are our near neighbours.

In 1998–99, Australia's official development assistance (ODA) will total approximately \$1.5b. This represents a real increase of 0.5% or \$50m over the 1997–98 budget outcome. Australia's ODA to gross national product ratio in 1998–99 is expected to be 0.27%, which is above the latest (1997) published average of all donors, 0.22%.

The majority of Australia's aid program is administered by the Australian Agency for International Development (AusAID). Assistance through AusAID takes two main forms: Country Programs (i.e. direct bilateral assistance to partner countries), and assistance through Global Programs. (This includes humanitarian and emergency assistance, contributions to multilateral development banks and international organisations, support for Australian non-government organisations, and funding for public information and development research.)

In 1997–98, Country Program assistance totalled \$829.4m and Global Programs \$471.0m. Other expenditure includes the costs of administering the aid program (\$58.1m in 1997–98).

Although AusAID administers most of Australia's development cooperation, other government agencies also contribute to overall ODA expenditure. For example, funding for the Australian Centre for International Agricultural Research, is expected to be \$40.5m in 1998–99. As well, in 1997–98, \$58.2m was spent by other government agencies on ODA related activities. In 1998–99, this figure is estimated to be \$61.5m.

Total ODA in 1997–98 was \$1.45b. Minor adjustments for AusAID's Fringe Benefit Tax and miscellaneous revenue are also included in this. This was higher than budgeted due to one-off additional humanitarian and emergency assistance to PNG and Indonesia.

## Country programs

Over half of Australia's overseas development assistance is provided on a country or regional program basis, focusing primarily on Papua New Guinea, the Pacific and East Asia. Development needs are also addressed selectively in South Asia, and Africa. The major recipients of Australian aid flows are set out in table 3.1.

**3.1 AUSTRALIAN AID FLOWS, Major Recipients—1998–99 Estimates**

Country	\$m
Papua New Guinea	320.9
Indonesia	120.0
Africa (incl. Seychelles, Mauritius and Comoros)	91.4
Vietnam	70.1
Philippines	59.8
China	55.8
Bangladesh	36.4
Cambodia	32.9
Thailand	25.5
Laos	21.3
Fiji	19.5
India	19.2
Vanuatu	13.1
Solomon Islands	13.1
Sri Lanka	11.7
Kiribati	6.6

Source: AusAID.

Individual country and regional programs are based on three-year strategy documents which articulate how the program will facilitate poverty reduction and promote sustainable development. Strategies relate the specific elements of AusAID's programs to the broader developmental needs of the country or region. They also take into account Australia's resources,

skills and experience in delivering aid, as well as the development priorities of the partner government. As a result, in addressing key development needs, over 80% of the aid budget is spent buying Australian goods and services for developing countries.

The five priority sectors for Australia's aid program are health, education, infrastructure, agriculture and rural development, and governance, with gender issues and the environment as major cross cutting concerns. Within this framework, development assistance programs comprise a range of activities. These include the provision of technical assistance, the supply of equipment and commodities, training and academic student scholarships, and food aid.

For the majority of partner countries, the nature of Australia's assistance is reviewed annually, usually during high level consultations with partner governments. By continually reviewing its assistance, Australia is able to adjust the aid program to respond to changing development needs. For example, a major theme of this year's aid budget is helping developing countries to minimise the impact of the current East Asian financial crisis. Another example is the tripling of the emergency aid allocation in response, in part, to the economic loss and suffering caused by El Niño.

Additional support to individual countries and regions is provided through a range of international organisations and community programs (see *Global programs*).

### Papua New Guinea

PNG receives the largest share of the Australian aid program, with total flows in 1998–99 estimated to reach \$320.9m, including country program assistance of \$314.4m. This represents over one-fifth of the total Australian development cooperation program, reflecting the significance of the relationship between the two countries and PNG's formidable development challenges and needs.

Australia's aid program to PNG aims to develop the institutional capacity, human resources and civil society necessary to maintain stability and social cohesion. It also aims to reduce poverty and promote self-reliance. Australia's approach is to strengthen PNG's ability to deliver basic services, implement development programs,

foster investment and create employment. It also seeks to enhance the PNG Government's capacity to devolve service delivery to provincial and district governments.

The main sectors that the PNG program currently focuses on are: transport and communication; education and training; health; and reconstruction (including on Bougainville).

In 1998–99, assistance in the form of program and project activities will continue to increase while direct budget support will decrease. This reflects an agreement to phase out budget support by the year 2000. This agreement was reached following a review in 1998 of the Treaty on Development Co-operation between the two countries. The Treaty is being further reviewed this year. This provides an opportunity to re-emphasise the guiding principles of the program, and also to underline the need for a more flexible, outcome-oriented aid relationship.

### South Pacific

The Pacific Island Countries (PICs) continue to be a key priority for the aid program.

These small, vulnerable and isolated countries face unique constraints to development. With relatively small domestic economies and resource bases, many PICs have subsistence-based economies and most rely on the public sector as the major contributor to the cash economy. Many PICs are remote from markets and have few exports.

Several countries are achieving encouraging results across a range of economic and social indicators, while a number are experiencing severe economic difficulties. In response to this situation, Australia is playing an important role in helping Pacific Island governments to pursue economic reforms necessary for sustainable growth.

In 1998–99, expenditure on bilateral, multi-country and regional programs in the Pacific will total around \$131m, making Australia the second largest donor to the region. In addition to support for economic reform, the focus of assistance will be on education, health, economic and public sector management, sustainable resource use and private sector development.



## East Asia

The East Asia region is one in which many countries, until recently, experienced rapid and sustained economic growth. Some countries nevertheless remain among the poorest in the world. The region's recent financial crisis presents extensive development challenges to even the better-placed countries, with effects of the crisis likely to persist for a number of years. The crisis has highlighted the need for an increased focus on governance in the region. Australia's program to East Asia is estimated to total \$401.1m in 1998–99, including bilateral country program assistance of \$322.5m, and has a particular focus on governance and economic activities.

Assistance to Vietnam, Cambodia and Laos, three of the world's poorest nations, concentrates on poverty alleviation through targeted interventions in areas such as health, education and training, and the development and reconstruction of basic infrastructure. In Indonesia, Australian assistance supports human resource development, rural development, environmental management, and maternal and child health care. The financial crisis currently facing Indonesia is the most severe in the Asian region. Some estimates suggest that up to 120 million people may be forced into absolute poverty as a result. Australian assistance is aimed at improving food security, employment generating activities and the provision of emergency medical supplies, in addition to a range of longer-term interventions aimed at promoting economic management capacity and reform.

Australia's assistance to the Philippines focuses on projects aimed at reducing poverty and improving governance in the Southern part of the country, especially Mindanao, which contains approximately 30% of the Philippines poor. Australia is supporting the recently established peace process in Mindanao where there has been conflict for over two decades. The program includes education, community health, water supply and agricultural projects.

Thailand is another of the East Asian countries most affected economically and socially by the financial crisis. Australia's aid program to Thailand had been due to cease in 2000–01. However, it will now continue beyond that time and a major new focus is on addressing the problems in the banking and finance system,

promotion of economic governance and mitigation of the negative effects of the financial crisis, especially on the poor and disadvantaged. In addition, 80 new student scholarships will be provided along with continued support for health and education projects.

China continues to face major development challenges, with over 200 million people living in poverty. China has embarked on an ambitious program of government restructuring, rationalising of state-owned enterprises and financial sector reform. Australia plans to support this program through technical advice and training. At the same time, the aid program will continue to support collaborative links between Australian and Chinese education and research institutions, maternal and child health projects, primary health activities in Tibet and rehabilitation of degraded agricultural lands.

## South Asia

While South Asia has made economic advances in recent years, the rate of economic growth has not kept pace with the rest of the world. The region contains nearly 40% of the world's poor. In 1998–99, total assistance to South Asia is estimated at \$89.4m, including country program assistance of \$52.8m. Australia's aid program to the region focuses on food security, human resource development, technology transfer, institutional strengthening, health, agriculture, the environment and community development. The main recipients are Bangladesh (\$36.4m), India (\$19.2m), and Sri Lanka (\$11.7m).

## Africa

Africa continues to face major development challenges, but improved economic performance and governance in many countries have increased hope for a turnaround in the poor development performance in recent decades. Most Australian development aid to Africa goes to South Africa and Mozambique. Priority areas of assistance to these countries include capacity building at senior levels of government administration, education and training, assistance in fighting HIV/AIDS, and water supply. These countries will receive \$18m of the \$33m in programmed development aid expected to be provided to Africa in 1998–99. The remaining funds will be primarily for other countries in southern Africa, principally for scholarships for in-Australia training and assistance through Australian non-government organisations.

Total Australian aid to Africa, which includes refugee and emergency assistance and programs through international organisations and NGOs, is expected to amount to \$91.4m in 1998–99.

## Global programs

### Multilateral development banks and international organisations

Multilateral cooperation is an important complement to Australia's bilateral programs. Through support for multilateral agencies, Australia is able to work in partnership with a wide range of other countries and provide assistance in sectors and regions where we are less active bilaterally. Australia contributes to multilateral policy and program decisions through active participation in the governing bodies of multilateral organisations. An enhanced program of monitoring and evaluation of multilateral organisations is being developed so that Australia can play as constructive and informed a role as possible and maximise the effectiveness of its multilateral support.

Contributions to international organisations in 1998–99 will total \$317.2m (21% of Australia's total overseas development assistance). United Nations development agencies will receive \$58.1m, with the largest contributions directed to the World Food Program (\$41.8m), the United Nations Development Program (\$6.7m) and the United Nations Children's Fund (\$4.6m). Australia's contributions to the multilateral development banks, totalling \$230.8m (excluding subscriptions), will go mainly to the concessional lending arms of the World Bank and the Asian Development Bank, namely the International Development Association and the Asian Development Fund respectively. Other beneficiaries of Australia's contributions to international organisations in 1998–99 include Commonwealth development organisations, international health and environment programs and international NGOs.

### Emergency and humanitarian programs

The scale and nature of humanitarian crises around the world make it impossible for Australia to respond in every case. However, Australia does provide substantial assistance for refugees, internally displaced people and victims of natural and man-made disasters. In 1998–99, \$100.9m has been allocated for emergency and humanitarian assistance to developing countries (\$34m and \$66.9m respectively).

Australia's emergency and humanitarian assistance is provided in a number of ways. Immediate life-sustaining support in the form of food, water and shelter is provided for refugees and victims of disasters, such as those affected by the drought and tidal wave emergencies in PNG. Assistance is also provided for disaster preparedness programs that aim to strengthen the capacity of local authorities to respond to and prevent emergencies. Particular emphasis is placed on rebuilding livelihoods and infrastructure. Such support, which includes landmine clearance, health and water supply, is vital for the successful repatriation of refugees and in helping to prevent further crises.

Australia also provides assistance to the United Nations such as the UN High Commission for Refugees and the UN Relief and Works Agency, as well as international and Australian NGOs.

### Non-government organisation (NGO) activities and academic research

The Australian Government actively assists Australian NGOs, research bodies and other professional groups to participate in the delivery of the aid program.

NGOs play a valuable role in translating the Australian community's concern for the poor and disadvantaged peoples of developing countries into activities which alleviate poverty in a direct and tangible way. Around \$86.3m will be provided in 1998–99 to accredited Australian NGOs to supplement the Australian community's voluntary contributions to NGOs' development activities. These activities include development projects, volunteer programs and emergency relief assistance. A key element of this funding is the AusAID-NGO Cooperation Program (ANCP), which subsidises development activities designed and implemented by NGOs. The ANCP has been allocated \$22.3m in 1998–99. Funding is also provided through a number of opportunities for involvement by Australian NGOs in bilateral country programs.

In 1998–99, \$19.2m will be provided to development activities of non-Australian NGOs, bringing the total Australian official aid directed through NGOs to an estimated \$105.5m.

The aid program also supports development-related research through the provision of funds to Australian academic institutions.

**Public information and development education**

Australians have a right to know how their support is assisting developing countries. Public information and development education activities play a key role in meeting this obligation. Outreach seminars disseminate information about the aid program and development issues to a wide range of people in the community. Seminars are also held to inform industry and business groups and potential contractors of opportunities to become involved in the aid program. The school-based Global Education Program is a major component of the Development Education Program. It concentrates on the professional development of teachers and the production of materials to support the teaching of Global Education in primary and secondary schools. Estimated expenditure on public information and development education in 1998–99 is \$1.3m.

**Development research and seminar support**

An estimated \$2.0m will be provided in 1998–99 for development research initiatives and seminar support.

The International Seminar Support Scheme enables participants from developing countries to attend international seminars that make a direct and practical contribution to development in their countries. The scheme also supports the participation of Australian key speakers at seminars of significant development relevance.

Research into development issues is commissioned from Australian academic research institutions. Research findings are disseminated to decision-makers throughout the Asia–Pacific region. In addition, assistance is provided in maintaining networks between experts in development studies who augment development research overseas and in Australia.

**Australian Centre for International Research (ACIAR)**

ACIAR is a statutory body with its own Board, Director and Policy Advisory Council. It promotes research into improving sustainable

agricultural production and natural resource management in developing countries. ACIAR also facilitates research collaboration between Australia and individual developing countries for mutual advantage by mobilising appropriate Australian research expertise to help developing countries to help themselves.

As well as commissioning research, ACIAR promotes project-related training and conducts pilot development studies to enhance the application of research results. The Centre is also responsible for Australia's contributions to international agricultural research centres such as the International Rice Research Institute. There are 20 such centres receiving Australian support. Most are organised under the Consultative Group on International Agricultural Research within the aegis of the World Bank. The centres constitute the core of international agricultural development, from food policy research to specific crop and agricultural environment research.

Funding provided to ACIAR in 1998–99 is estimated at \$40.5m.

**Aid management and administration**

AusAID's central office is in Canberra, with State offices in Sydney, Brisbane, Melbourne, Adelaide and Perth.

AusAID is an administratively autonomous agency within the Foreign Affairs and Trade portfolio. The Agency's principal organisational functions are to develop and implement programs of assistance in partnership with partner countries; and to provide professional policy advice and support to the Government on international development issues, program performance and innovations in the delivery of overseas aid. To oversee the implementation of aid projects in countries, AusAID supports officers in 25 overseas missions, employing a combination of Australian citizens and locally engaged staff.

Funding for aid management and administration in 1998–99 is estimated at \$62.9m.



## The network of Australian diplomatic and consular missions overseas

DFAT manages an extensive network of Australian diplomatic and consular missions abroad, supporting Australia's international interests and providing consular and passport services. The Department also maintains offices in all of the State capitals and in Darwin.

Listed in tables 3.2 to 3.6 are the locations of Australia's diplomatic and consular network.

### 3.2 AUSTRALIAN EMBASSIES, HIGH COMMISSIONS AND CONSULATES MANAGED BY DFAT(a)

Country	Post
Argentina	Buenos Aires
Austria	Vienna
Bangladesh	Dhaka
Barbados	Bridgetown
Belgium	Brussels
Brazil	Brasilia
Brunei Darussalam	Bandar Seri Begawan
Burma (Myanmar)	Rangoon
Cambodia	Phnom Penh
Canada	Ottawa
Chile	Santiago
China, Peoples Republic of	Beijing
	Guangzhou
	Hong Kong
	Shanghai
Cyprus	Nicosia
Egypt	Cairo
Federated States of Micronesia	Pohnpei
Fiji	Suva
France	Paris
Germany	Bonn
Greece	Athens
Holy See	Holy See
Hungary	Budapest
India	New Delhi
Indonesia	Bali
	Jakarta
Iran	Tehran
Ireland	Dublin
Israel	Tel Aviv
Italy	Rome
Japan	Tokyo
Jordan	Amman
Kazakhstan	Almaty
Kenya	Nairobi
Kiribati	Tarawa
Korea	Seoul
Laos	Vientiane
Lebanon	Beirut
Malaysia	Kuala Lumpur

For footnotes see end of table.

...continued

### 3.2 AUSTRALIAN EMBASSIES, HIGH COMMISSIONS AND CONSULATES MANAGED BY DFAT—continued

Country	Post
Malta	Malta
Mauritius	Port Louis
Mexico	Mexico City
Nepal	Kathmandu
Netherlands	The Hague
New Caledonia	Noumea
New Zealand	Wellington
Nigeria	Lagos
Pakistan	Islamabad
Papua New Guinea	Port Moresby
Philippines	Manila
Poland	Warsaw
Russia	Moscow
Samoa	Apai
Saudi Arabia	Riyadh
Singapore	Singapore
Solomon Islands	Honiara
South Africa	Pretoria
Spain	Madrid
Sri Lanka	Colombo
Sweden	Stockholm
Syria	Damascus
Thailand	Bangkok
Tonga	Nuku'alofa
Turkey	Ankara
United Kingdom	London
United States of America	Honolulu
	New York
	Washington
Vanuatu	Port Vila
Venezuela	Caracas
Viet Nam	Hanoi
	Ho Chi Minh City
Yugoslavia	Belgrade
Zimbabwe	Harare

(a) The list does not include Berlin (a branch office of the Embassy in Bonn) or Cape Town (an office of the High Commission in Pretoria). Both offices are staffed permanently by DFAT officers. The Australian Chamber of Commerce and Industry (ACCI) maintains in Taipei the Australian Commerce and Industry Office (ACIO), the staff of which include officers on leave without pay or seconded from DFAT, Austrade and the Department of Immigration and Multicultural Affairs.

Source: Department of Foreign Affairs and Trade.

### 3.3 MULTILATERAL MISSIONS

	Post
OECD	Paris
UN	Geneva
	New York
	Vienna
WTO	Geneva

Source: Department of Foreign Affairs and Trade.

**3.4 CONSULATES MANAGED BY AUSTRADE**

Country	Post
Brazil	Sao Paulo
Canada	Toronto
Germany	Frankfurt
India	Mumbai
Italy	Milan
Japan	Fukuoka
	Nagoya
	Osaka
	Sapporo
	Sendai
New Zealand	Auckland
South Africa	Johannesburg
Turkey	Istanbul
United Arab Emirates	Dubai
United States of America	Atlanta
	Los Angeles
	San Francisco

Source: Department of Foreign Affairs and Trade.

**3.5 CONSULATES MANAGED BY THE DEPARTMENT OF IMMIGRATION AND MULTICULTURAL AFFAIRS**

Country	Post
United Kingdom	Manchester

Source: Department of Foreign Affairs and Trade.

**3.6 AUSTRALIA'S NETWORK OF HONORARY CONSULS**

Country	Post
Bolivia	La Paz
Brazil	Rio de Janeiro
Bulgaria	Sofia
Canada(a)	Vancouver
Colombia	Bogota
Croatia	Zagreb
Czech Republic(a)	Prague
Denmark(a)	Copenhagen
Ecuador	Guayaquil
Estonia	Tallinn
Finland	Helsinki
Former Yugoslav Republic of Macedonia	Skopje
French Polynesia	Papeete
Indonesia	Balik Papan
	Medan
	Pusan
Korea	Riga
Latvia	Vilnius
Lithuania	Kota Kinabalu
Malaysia	Kuching
	Penang
	Guadalajara
Mexico	Monterrey
Mozambique	Maputo
Norway	Oslo
Pakistan	Karachi
Papua New Guinea	Lae
Peru	Lima
Romania	Bucharest
Russia(a)	Vladivostok
Slovenia	Ljubljana
South Africa	Durban
Spain	Barcelona
	Seville
Ukraine	Kyiv
United Kingdom	Edinburgh
United States of America	Boston
	Denver
Uruguay	Montevideo

(a) Consulates managed by Austrade.

Source: Department of Foreign Affairs and Trade.

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The Department of Foreign Affairs and Trade's web site (<http://www.dfat.gov.au>) contains information about current issues, together with a range of related material, including ministerial speeches, background information on Australia's relations with other countries, positions on international issues, and consular and travel advice.

Further information about the Department can be found in its *Annual Report 1997–98*. This report is available through AusInfo bookshops, the Department's web site, or the Parliamentary and Media Branch of the Department of Foreign Affairs and Trade (Tel: (+61) (0)2 6261 1111).

*In the National Interest: Australia's Foreign and Trade Policy White Paper* (1997) is available on the Internet at <http://www.dfat.gov.au/ini/wp.html>.

For further information on Australia and the process of international treaty-making, readers can obtain *Australia and International Treaty Making: Information Kit: June 1997*, published by the Department of Foreign Affairs and Trade, available from the Treaties Secretariat (Tel: (+61) (0)2 6261 3521; Fax: (+61) (0)2 6261 2144), or through the Department's web site.



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## Introduction

This chapter outlines Australia's defence policy and presents an overview of the Defence organisation, its functions and how it operates, and the reforms it is undergoing.

## Australia's defence

A fundamental responsibility of the Australian Government is to provide for the security of Australia, its people and its interests. This responsibility is carried out by the Defence organisation.

The development of Defence policy, planning, programs and activities reflects the core defence task to ensure that the Australian Defence Force is able to operate effectively in conflict, should that be necessary, and to contribute to managing Australia's national security interests in such a way that conflict does not occur. The mission of the Defence organisation therefore involves two key dimensions: the development and maintenance of the capacity to defend Australia and its interests from armed attack; and the promotion of a regional and global security environment which enhances Australia's security by reducing the likelihood of armed attack against Australia or its interests.

Australia is faced with numerous political, economic and social challenges, stemming both from changes in the Australian community and economy, and from changes in the international strategic, political and economic environments. The Defence organisation is currently going through a period of major change. In part, this is in response to the changing strategic environment in the Asia–Pacific region following the end of the Cold War. Australia's traditional economic and technological edge has eroded as the region has witnessed a sustained period of economic growth. Notwithstanding recent economic events in the region, Australia faces a challenge in maintaining its relative strategic standing.

The Government has responded to this challenge by providing the Defence organisation with strategic guidance and policy:

- to refocus, through *Australia's Strategic Policy*, Defence activities into a rigorous and detailed set of priorities for force development;

- to seek, through the *Defence Reform Program*, efficiencies within Defence in order to reinvest savings into training, operations and equipment; and
- to implement, through the *Defence and Industry—Strategic Policy Statement*, the appropriate framework in partnership with industry to ensure that the Australian Defence Force acquires the capabilities identified as vital, in a nationally efficient way.

## Major developments

### Strategic policy

*Australia's Strategic Policy*, released in December 1997, establishes the direction for Australian defence planning into the next century. It builds on the Government's White Paper on Foreign and Trade Policy, *In the National Interest*, to outline the modern, relevant military force required to undertake successfully the range of tasks that could be required of the Australian Defence Force in the years ahead.

*Australia's Strategic Policy* identifies two major factors shaping Australia's strategic environment—economic growth in East Asia, and particularly its implications for regional arms modernisation programs; and the changing strategic relationships between the region's major powers.

The policy does not identify any particular threat or country, nor does it attempt to predict circumstances in which Australia might be threatened or would need to commit the Australian Defence Force. Rather, *Australia's Strategic Policy* builds on the Government's understanding of the fundamentals of Australia's strategic environment and the key long-term trends likely to affect those fundamentals.

The policy identifies Australia's key strategic interests as:

- helping to avoid destabilising strategic competition between the region's major powers;
- helping to prevent the emergence in the Asia–Pacific region of a security environment dominated by any power or powers whose interests would likely be inimical to those of Australia;

- helping to maintain a benign security environment in South–East Asia—especially in maritime South–East Asia—which safeguards the territorial integrity of all countries in the region;
- helping to prevent the positioning in neighbouring states by any foreign power of military forces which might be used to attack Australia; and
- helping to prevent the proliferation of weapons of mass destruction in our region.

In light of these priorities, the policy outlines three basic tasks which the Australian Defence Force could be required to perform:

- defeating attacks on Australia;
- defending Australia's regional interests; and
- supporting a global security environment which discourages aggression between states.

### **Defence Reform Program**

The Defence organisation has entered into a program of major management change known as the Defence Reform Program (DRP). This program commenced implementation in July 1997 following the findings of the Defence Efficiency Review. The program is intended to free up considerable financial resources for reinvestment in Defence's core business of combat capability (equipment, training, operations and readiness) while the Government has maintained the overall level of Defence funding.

While the DRP involves major organisational changes and the achievement of large-scale efficiency gains, it is fundamentally about changing the way the Defence organisation is managed and operates. A more corporate approach to planning and decision making, including more effective long-term planning, is being implemented. Common support organisations for education and training, logistics, personnel management, corporate information and corporate support have been created, and the support functions will be rationalised, with many of them to be market tested over the next three years.

Ten years ago, the Australian Defence Force had 68,000 permanent members and 26,600 Reservists, supported by 36,000 civilian personnel. By early next decade, there are

expected to be 50,000 permanent members and 30,000 active Reservists, supported by about 15,000 Defence civilians. However, the percentage of Australian Defence Force personnel in the combat force will be increased to 65%—the highest in two decades.

The DRP is planned to realise one-off savings of \$500m and ongoing annual savings of at least \$900m. These are expected to be achieved substantially by the end of 2000–01. The Defence organisation has already achieved approximately \$100m in recurrent savings as part of this reform.

Initial decisions have been made on the reallocation of the savings generated through the DRP. They involve a balance of reallocation into the current force (personnel in the combat force, operational costs, preparedness and logistic support) and into the future force (major capital equipment and facilities).

### **Defence and industry policy**

A strong focus by the Defence organisation on its core functions will see a corresponding increase in reliance on industry for support across the spectrum of defence business. Increasingly, Defence will engage companies which supply such services as training, facilities management, base support, logistics and maintenance in addition to its traditional equipment manufacturers. Companies will deliver a much greater share of Australia's military capabilities in peace and in war as manufacturers, as service providers, and as suppliers and maintainers of defence systems.

Defence is the single largest Commonwealth purchaser and, therefore, an active player in the implementation of national industry and purchasing policy. It is, and will remain, a monopoly purchaser in some sectors. This situation poses special challenges to achieving sustainable defence industries.

The new policy enunciated in the *Defence and Industry—Strategic Policy Statement*, which will see industry accepted and recognised as an integral part of Australia's national security, was released in June 1998. The policy, developed in close consultation with business, is based on commercial realities as well as strategic considerations. The aim of the policy is to ensure a technologically-advanced Australian Defence Force supported by a close partnership with efficient, innovative and sustainable firms.



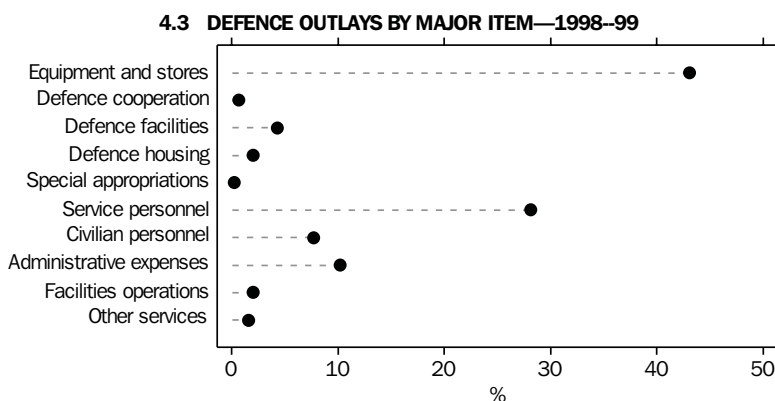
Source: Department of Defence.

Graph 4.3 shows Defence outlays budgeted for 1998–99 by major item. It shows that Equipment and stores predominate with 43%, followed by Service personnel with 28%.

Table 4.4 shows the expenditures (in current prices) on major capital equipment in Australia and overseas for the years 1986–87 to 1997–98,

and budgeted expenditures for 1998–99.

Graph 4.5 shows the proportions of expenditure in Australia and overseas over these years. In 1997–98, expenditures in Australia and overseas were at about the same level; in 1998–99, expenditure overseas is expected to slightly exceed expenditure in Australia, for the first time since 1986–87.



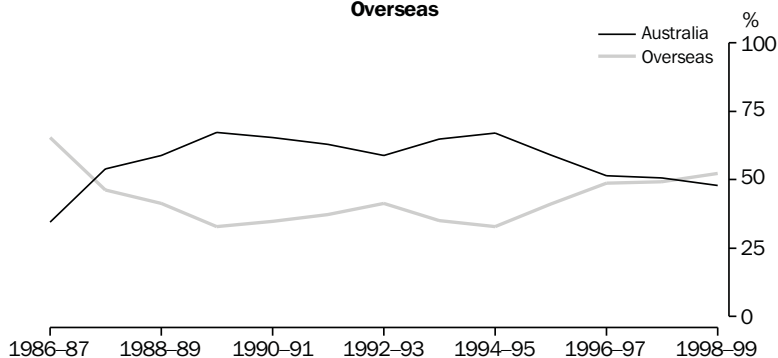
Source: Department of Defence.

#### 4.4 MAJOR CAPITAL EQUIPMENT EXPENDITURE, Australia and Overseas

	Australia	Overseas	Total	Australia
	\$m	\$m	\$m	% of Total
1986–87	712	1 343	2 055	34.6
1987–88	933	800	1 733	53.8
1988–89	1 045	734	1 779	58.7
1989–90	1 282	626	1 908	67.2
1990–91	1 400	747	2 147	65.2
1991–92	1 400	824	2 224	62.9
1992–93	1 387	975	2 362	58.7
1993–94	1 528	826	2 354	64.9
1994–95	1 603	785	2 388	67.1
1995–96	1 264	877	2 141	59.0
1996–97	1 118	1 055	2 173	51.4
1997–98 (est)	1 157	1 127	2 284	50.7
1998–99 (est)	1 304	1 423	2 727	47.8

Source: Department of Defence.

#### 4.5 MAJOR CAPITAL EQUIPMENT EXPENDITURE, Australia and Overseas



Source: Department of Defence.

### Personnel numbers

The average personnel strength planned for 1998–99 is 101,309, an increase of 786 from the actual outcome for 1997–98 of 100,523. The 1998–99 estimate is composed of

54,035 permanent Defence Force members, 30,143 Reserves and 17,042 civilians. Table 4.6 shows the numbers of defence service and civilian personnel for the years 1988–89 to 1997–98 and planned for 1998–99.

#### 4.6 DEFENCE SERVICE AND CIVILIAN PERSONNEL, 1988–89 to 1998–99

	Navy	Army	Air Force	Civilian
1988–89	15 641	31 896	22 468	32 502
1989–90	15 652	30 894	22 279	24 400
1990–91	15 786	30 789	22 055	24 412
1991–92	15 549	30 733	21 893	23 750
1992–93	15 294	30 064	20 780	22 558
1993–94	14 776	27 802	18 642	20 724
1994–95	14 702	26 483	17 456	20 188
1995–96	14 473	26 746	17 240	19 830
1996–97	14 377	25 682	16 705	19 042
1997–98	14 206	25 196	16 172	17 664
1998–99 (est.)	13 850	24 400	15 785	17 042

Source: Department of Defence.

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## Introduction

Population statistics are not themselves indicators of wellbeing, whether of individuals, groups or the population as a whole. However, they underpin the discussion of a wide range of issues relating to the population, including immigration, multiculturalism, ageing and population sustainability.

The changing size and distribution of Australia's population have implications for service provision and delivery in areas such as health, education, housing and the labour market. Population trends underlie many social changes and assist in the planning of all areas of social and economic policy.

The principal source of data on the Australian population is the Census of Population and Housing, which has been conducted at five-yearly intervals since 1961. The most recent census was in 1996, and some results from it are included in this chapter. Registration of births, deaths and marriages also provides valuable information between censuses, as do the details supplied by incoming and outgoing overseas travellers. Data on divorces and interstate migration are based on administrative records.

An article at the end of the chapter provides a statistical profile of Aboriginal and Torres Strait Islander Australians, based on the results of the 1996 Census.

## Population structure

### Introduction

This section examines the structure of the population: its size, age profile and distribution. There is an emphasis on changes in the structure over time, especially changes in the growth rate of the population.

As shown in table 5.1, Australia's resident population at 30 June 1997 was 18.5 million, an increase of 1.2% over the previous year. The slightly lower growth rate in 1996–97 was mainly due to a decline in net overseas migration. In the year ended 30 June 1997, the net gain from overseas migration was 95,800, 8% less than in the previous year (104,100).

The growth rate in Australia for the 12 months to June 1996 (1.2%) was similar to the growth rates in the United States of America (1.0%), New Zealand (1.1%), Thailand (1.0%), China (1.0%) and Indonesia (1.5%). The growth rates for Japan (0.2%), the United Kingdom (0.2%) and Germany (0.7%) were well below that of Australia, while Singapore (1.9%), Hong Kong (1.9%), Malaysia (2.1%) and Papua New Guinea (2.3%) experienced growth rates above that of Australia. These growth rates are shown in table 5.2.

### 5.1 ESTIMATED RESIDENT POPULATION AND COMPONENTS OF POPULATION CHANGE(a)

Year ended 30 June	Population								
	Live births(b)	Deaths(b)	Natural increase(b)	Net permanent and long-term movement	Category jumping(c)	Net overseas migration(d)	At end of period	Increase(e)	Increase(e)
	'000	'000	'000	'000	'000	'000	'000	'000	%
1992	259.2	120.8	138.4	89.9	-21.3	68.6	17 494.7	210.7	1.22
1993	260.0	121.3	138.6	62.7	-32.6	30.0	17 667.1	172.4	0.99
1994	258.3	123.5	134.8	67.4	-20.8	46.5	17 854.7	187.6	1.06
1995	258.2	126.2	132.0	93.0	-12.9	80.1	18 071.8	217.1	1.22
1996	250.4	126.4	124.0	109.7	-5.5	104.1	18 310.7	238.9	1.32
1997	253.4	127.6	125.8	94.4	1.4	95.8	18 532.2	221.5	1.21

(a) From the September quarter 1993, population estimates include Christmas Island and the Cocos (Keeling) Islands.

(b) Numbers of births and deaths are on a year of occurrence basis for final data and will therefore differ from the Births, Deaths and Marriages part of this chapter. Births and deaths data are on a year of registration basis for preliminary data.

(c) An adjustment for the effect of persons whose duration of stay (category) differs from their stated intentions, entailing a reclassification from short-term to permanent/long-term or vice versa. (d) Sum of the net permanent and long-term movement plus category jumping. (e) For dates prior to June 1996, differences between the total increase shown and the sum of the natural increase and net overseas migration arise from retrospective adjustments to population estimates (which are made after each Census) to compensate for any intercensal discrepancy. A description of intercensal discrepancy is contained in the ABS Information Paper: Population Estimates: Concepts, Sources and Methods (3228.0).

Source: Australian Demographic Statistics (3101.0).

## 5.2 POPULATION SIZE AND RATE OF GROWTH FOR SELECTED COUNTRIES

Country	Population as at 30 June		Rate of growth %
	1995 million	1996 million	
Australia	18.1	18.3	1.3
China	1 198.1	1 210.0	1.0
Germany	83.0	83.5	0.7
Hong Kong	6.2	6.3	1.9
Indonesia	203.5	206.6	1.5
Japan	125.2	125.5	0.2
Malaysia	19.6	20.0	2.1
New Zealand	3.5	3.6	1.1
Papua New Guinea	4.3	4.4	2.3
Singapore	3.3	3.4	1.9
Thailand	58.2	58.9	1.0
United Kingdom	58.4	58.5	0.2
United States of America	263.0	265.6	1.0
<b>World</b>	<b>5 702.0</b>	<b>5 771.0</b>	<b>1.5</b>

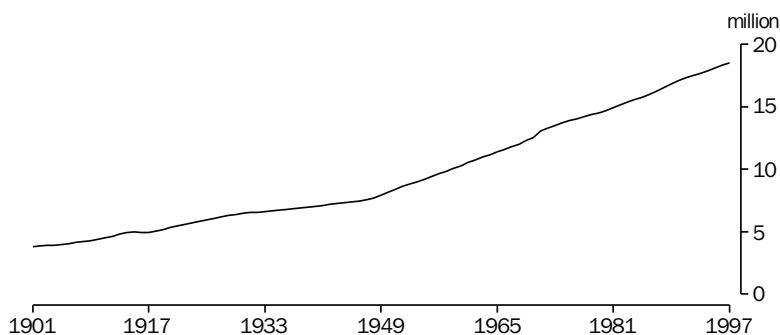
Source: U.S. Bureau of the Census, International Data Base; Population Reference Bureau, World Population Data Sheet 1996; Australian Demographic Statistics (3101.0).

## Population size

Australia's population of 18.5 million at 30 June 1997 was almost five times the size of the population at the time of Federation (1 January 1901). Graph 5.3 shows the growth in Australia's population since 1901. The main component of Australia's population growth has been natural increase which, since the beginning of the twentieth century, has contributed about two-thirds of the total growth. Net overseas migration has also contributed to natural increase through the Australian-born children of migrants. Components of population growth are discussed in more detail in the next section.

Table 5.4 shows that the growth in population has not been evenly distributed across the States and Territories. At Federation, South Australia had nearly twice the population of Western Australia, which in turn had only marginally more people than Tasmania. However, in 1982, Western Australia surpassed South Australia as the fourth most populous State. In 1997, Western Australia had 3.8 times as many people as Tasmania.

## 5.3 POPULATION OF AUSTRALIA(a)(b)



(a) Excludes full-blooded Aboriginal people before 1961. (b) A break in series occurred in 1971 due to a change in the definition and measurement of the population.

Source: Australian Demographic Statistics (3101.0); Australian Demographic Trends (3102.0).



## 5.4 POPULATION, Australia's States and Territories

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
As at 30 June	'000	'000	'000	'000	'000	'000	'000	'000	'000
1907	1 543	1 226	544	367	255	183	4	..	<b>4 122</b>
1917	1 904	1 409	683	440	306	193	5	3	<b>4 941</b>
1927	2 402	1 727	873	565	392	211	4	8	<b>6 182</b>
1937	2 693	1 853	993	589	457	233	6	11	<b>6 836</b>
1947	2 985	2 055	1 106	646	502	257	11	17	<b>7 579</b>
1957	3 625	2 656	1 413	873	688	326	21	38	<b>9 640</b>
1967(a)	4 295	3 274	1 700	1 110	879	375	62	103	<b>11 799</b>
1977(b)	5 002	3 837	2 130	1 286	1 204	415	104	214	<b>14 192</b>
1987	5 617	4 210	2 675	1 393	1 496	449	158	265	<b>16 264</b>
1997p	6 274	4 605	3 401	1 480	1 798	474	187	310	<b>18 532</b>

(a) Prior to 1961, data exclude full-blooded Aboriginal people. (b) In 1971, there was a break in series due to a change in the definition and measurement of the population.

Source: Australian Demographic Statistics (3101.0); Australian Demographic Trends (3102.0).

## Growth

Population growth results from natural increase (the difference between births and deaths) and net overseas migration (the difference between immigration and emigration).

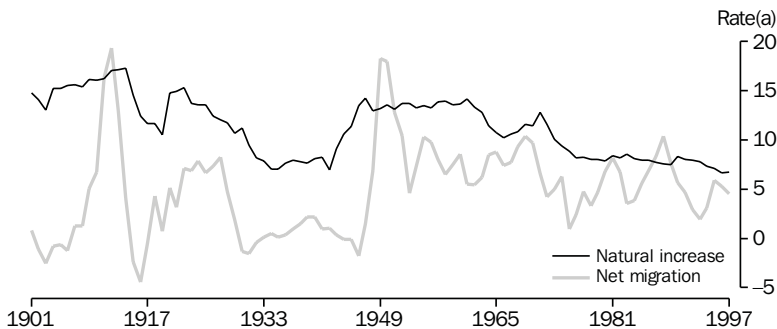
Australia's population grew from 3.8 million at the turn of the century to 18.5 million in June 1997. The second half of the century has seen higher rates of growth than the first, due to strong natural increase, with the post World War II baby boom and falling death rates, and increased net overseas migration. Natural increase has been the main source of the growth since the turn of the century, contributing two-thirds of the total increase between 1901 and 1997.

Net overseas migration, while a significant source of growth, is much more volatile, fluctuating under the influence of government policy as well as political, economic and social conditions in Australia and the rest of the world.

The growth rates due to natural increase and net migration from 1901 to 1997 are shown in graph 5.5.

In the 1860s, the average annual rate of natural increase was 24 per 1,000 population. It fell rapidly over the next 80 years, and by the mid-1930s the rate was 7.1 per 1,000. In the post war years the baby boom, and the immigration of many young people who then had children in Australia, increased Australia's birth rate and the

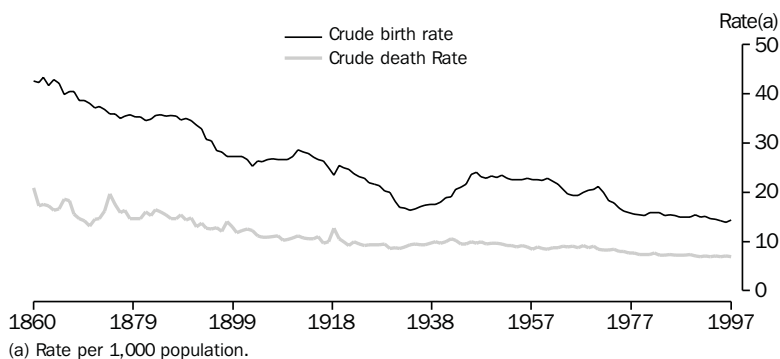
## 5.5 COMPONENTS OF POPULATION GROWTH



(a) Rate per 1,000 population.

Source: Australian Demographic Statistics (3101.0), Australian Demographic Trends (3102.0).

## 5.6 COMPONENTS OF NATURAL INCREASE



Source: *Australian Demographic Statistics (3101.0)*; *Australian Demographic Trends (3102.0)*.

rate of natural increase. Natural increase was over 13 per 1,000 population every year from 1946 to 1962.

Since 1962, falling fertility has led to a fall in the rate of natural increase. In 1996, the rate of natural increase fell below 7 per 1,000 for the first time.

Since 1860, the crude death rate has fallen from about 21 deaths per 1,000 population to seven in 1996. Crude birth and death rates from 1860 to 1997 are shown in graph 5.6.

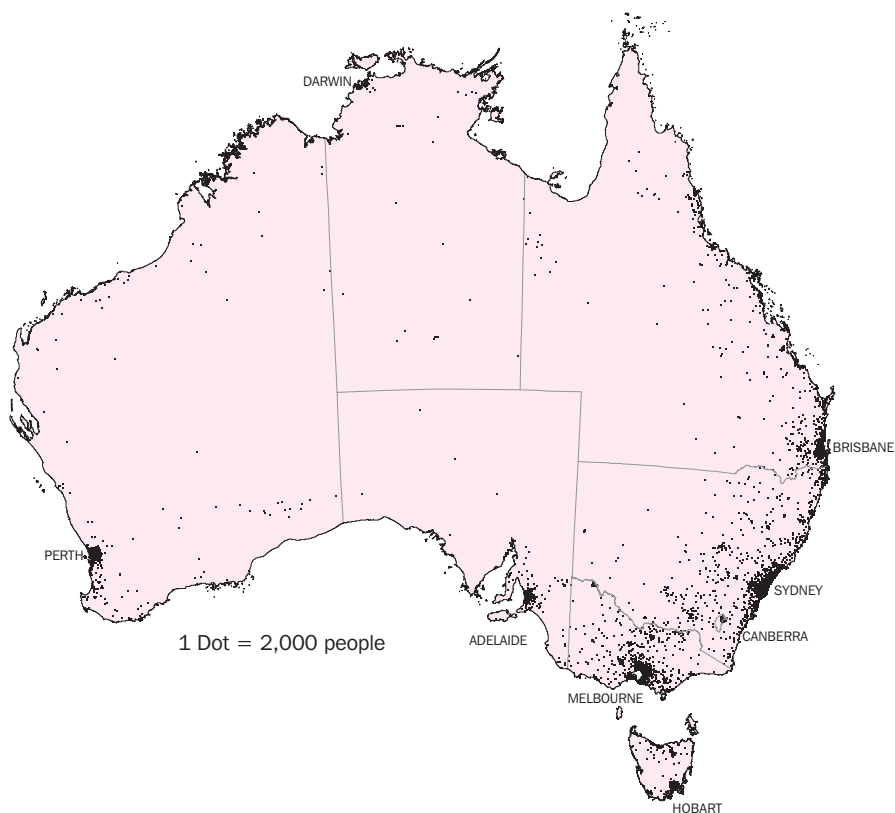
### Distribution

Most of Australia's population is concentrated in two widely separated coastal regions. By far the largest of these, in terms of area and population, lies in the south-east and east. The smaller of the

two regions is in the south-west of the continent. In both coastal regions the population is concentrated into urban centres, particularly the State and Territory capital cities. Half the area of the continent contains only 0.3% of the population, and the most densely populated 1% of the continent contains 84% of the population. The distribution of Australia's population is shown in map 5.7.

Although New South Wales remains the most populous State, with 6.3 million people at 30 June 1997, Queensland showed the highest level of growth over the five year period to 1997, increasing by 12.3%. In contrast, the populations in South Australia and Tasmania remained comparatively stable, increasing by 1.6% and 0.8% over the same period (see table 5.8).

## 5.7 POPULATION(a) DISTRIBUTION, AUSTRALIA—1997



(a) Estimated resident population.

Source: *Regional Population Growth, Australia 1997* (3218.0).

## 5.8 ESTIMATED RESIDENT POPULATION, By State and Territory

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)	Aust.(b)
As at 30 June	'000	'000	'000	'000	'000	'000	'000	'000	'000
1992	5 962.6	4 455.0	3 030.0	1 456.5	1 658.0	469.8	168.1	294.7	<b>17 494.7</b>
1993	6 004.9	4 472.4	3 109.8	1 460.7	1 677.7	471.7	170.7	299.3	<b>17 667.1</b>
1994	6 060.2	4 487.6	3 187.1	1 466.1	1 703.0	472.9	173.4	301.5	<b>17 854.7</b>
1995	6 127.0	4 517.4	3 265.1	1 469.4	1 733.8	473.7	177.6	304.8	<b>18 071.8</b>
1996	6 204.7	4 560.2	3 338.7	1 474.3	1 765.3	474.4	181.8	308.3	<b>18 310.7</b>
1997	6 274.4	4 605.1	3 401.2	1 479.8	1 798.1	473.5	187.1	309.8	<b>18 532.2</b>

(a) Excludes Jervis Bay Territory from September 1993. (b) Includes Christmas Island and the Cocos (Keeling) Islands from September 1993.

Source: *Australian Demographic Statistics* (3101.0).

The main factor changing the distribution of Australia's population is internal migration. During 1996–97, 375,225 people moved from one State or Territory to another, 7% more than in the previous financial year. For the past two decades Queensland, Western Australia and the Australian Capital Territory generally

experienced net gains. In 1996–97 only Queensland, Western Australia and the Northern Territory recorded net interstate migration gains. Tasmania's population declined by about 900 people, as natural increase in the State was offset by the largest net interstate loss in 20 years (see table 5.9).

### 5.9 POPULATION GROWTH RATES

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)	Aust.(b)
Year ended 30 June	%	%	%	%	%	%	%	%	%
NATURAL INCREASE									
1992	0.76	0.75	0.85	0.59	0.92	0.69	1.74	1.17	0.79
1993	0.77	0.75	0.84	0.58	0.88	0.67	1.67	1.15	0.78
1994	0.73	0.73	0.82	0.55	0.85	0.66	1.66	1.09	0.76
1995	0.70	0.69	0.80	0.54	0.85	0.63	1.62	1.07	0.73
1996	0.65	0.62	0.76	0.51	0.79	0.53	1.56	0.99	0.68
1997p	0.67	0.61	0.74	0.49	0.79	0.52	1.54	1.00	0.68
NET OVERSEAS MIGRATION									
1992	0.52	0.41	0.27	0.20	0.46	0.01	0.10	0.01	0.39
1993	0.21	0.18	0.12	0.11	0.28	0.02	0.03	-0.20	0.17
1994	0.36	0.24	0.16	0.14	0.39	0.04	0.11	-0.14	0.26
1995	0.59	0.43	0.32	0.20	0.61	0.07	0.26	0.04	0.44
1996	0.77	0.56	0.39	0.25	0.70	0.08	0.31	0.13	0.57
1997p	0.65	0.50	0.41	0.24	0.74	0.07	0.32	0.04	0.52
NET INTERSTATE MIGRATION									
1992	-0.23	-0.41	1.13	-0.05	-0.08	-0.06	-0.58	0.46	..
1993	-0.29	-0.57	1.58	-0.36	-0.01	-0.32	-0.41	0.44	..
1994	-0.20	-0.65	1.41	-0.27	0.22	-0.45	-0.50	-0.14	..
1995	-0.22	-0.49	1.23	-0.48	0.29	-0.56	0.22	-0.16	..
1996	-0.24	-0.28	0.98	-0.42	0.23	-0.55	0.18	-0.21	..
1997p	-0.22	-0.14	0.69	-0.35	0.29	-0.78	0.96	-0.54	..
TOTAL POPULATION GROWTH(c)									
1992	1.08	0.78	2.33	0.71	1.34	0.65	1.57	1.85	1.22
1993	0.71	0.39	2.63	0.29	1.18	0.39	1.58	1.57	0.99
1994	0.92	0.34	2.49	0.37	1.51	0.27	1.55	0.73	1.06
1995	1.10	0.66	2.45	0.22	1.81	0.16	2.41	1.10	1.22
1996	1.27	0.95	2.25	0.33	1.82	0.16	2.42	1.13	1.32
1997p	1.12	0.99	1.87	0.38	1.86	-0.20	2.91	0.50	1.21

(a) Excludes Jervis Bay Territory from September 1993. (b) Includes Christmas Island and the Cocos (Keeling) Islands from September 1993. (c) Differences between the total growth rate and the sum of natural increase and net migration rates arise from retrospective adjustments (which are made after each Census) to eliminate any intercensal discrepancy.

Source: Australian Demographic Statistics (3101.0).

Table 5.10 sets out the estimated resident populations in the major population centres at 30 June 1992 and 1997. About two-thirds of Australia's population growth (678,000) between 1992 and 1997 occurred in the capital cities, the most significant increases being on the outskirts

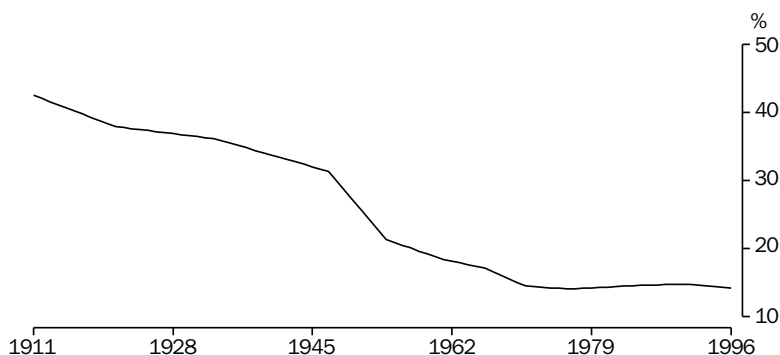
of these metropolitan regions. Of all the capital cities, Brisbane had the highest level of population growth over this period, increasing 11.5% to 1.5 million in 1997. Perth and Darwin had the next highest population growth rates, with increases of 9.2% and 9.0% respectively.

**5.10 ESTIMATED RESIDENT POPULATION IN MAJOR POPULATION CENTRES—As at 30 July(a)**

	1992	1997p
Major population centre	'000	'000
Capital cities Statistical Division		
Sydney	3 710.2	3 934.7
Melbourne	3 182.4	3 321.7
Brisbane	1 388.4	1 548.3
Adelaide	1 066.0	1 083.1
Perth	1 207.4	1 319.0
Hobart	192.4	195.5
Darwin	77.3	84.3
Canberra	293.6	309.5
Other		
Newcastle(b)	448.2	468.9
Gold Coast–Tweed(b)	292.6	367.7
Canberra–Queanbeyan(b)	327.9	347.1
Wollongong(b)	247.0	258.1
Sunshine Coast(b)	126.4	162.1
Geelong(b)	152.3	153.1
Townsville(b)	115.2	123.6
Cairns(b)	89.3	109.5
Launceston(b)	97.2	98.7
Albury–Wodonga(b)	89.0	93.3
Toowoomba City(c)	85.1	86.7
Burnie–Devonport(b)	79.0	79.6
Ballarat(b)	79.5	78.9
La Trobe Valley(b)	78.8	75.4
Bendigo(b)	72.7	74.8
Bathurst–Orange(b)	69.7	72.1
Rockhampton(b)	63.5	64.5
Mackay(b)	55.7	62.4
Coffs Harbour(b)	52.2	58.3
Hastings(b)	51.2	58.2
Wagga(b)	55.1	56.2
Bundaberg(b)	49.9	54.8
Greater Taree(b)	42.2	43.5
Lismore(b)	42.5	43.5
Shepparton(b)	39.7	41.8
Mildura(b)	40.2	41.4
Gladstone(b)	33.8	38.1
Dubbo(d)	34.6	36.7
Tamworth(d)	35.9	35.2
Kalbarrie/Boulder(d)	27.1	30.5

(a) Based on 1997 Statistical Local Area boundaries. (b) Statistical District. (c) Statistical Subdivision. (d) Statistical Local Area.

Source: Australian Demographic Statistics (3101.0).

**5.11 RURAL POPULATION, Percentage of Total Population**

Source: Unpublished data, Census of Population and Housing.

Other major population centres that experienced significant population increases between 1992 and 1997 were the Sunshine Coast, Gold Coast–Tweed and Cairns (28.2%, 25.7% and 22.7% respectively).

Rapid population growth was also recorded in most statistical local areas (SLAs) elsewhere along the Queensland and New South Wales coastline, and in some SLAs in the south-west corner of Western Australia.

Some areas of Australia have experienced significant population decline in recent years. The inner and middle suburbs of some of the capital cities and major urban centres have experienced population decline. This has occurred primarily because residential areas have been redeveloped for commercial uses or younger generations of people have moved away to newer suburbs. However, in some inner areas this decline has slowed, or even been reversed, by the influx of young people.

There are also areas in rural and regional Australia which have experienced population decline, mainly through net migration loss. Such population loss is associated with technological, social and economic changes in the rural economy, and industry restructuring and resource depletion in local economies. A notable example is Whyalla in South Australia.

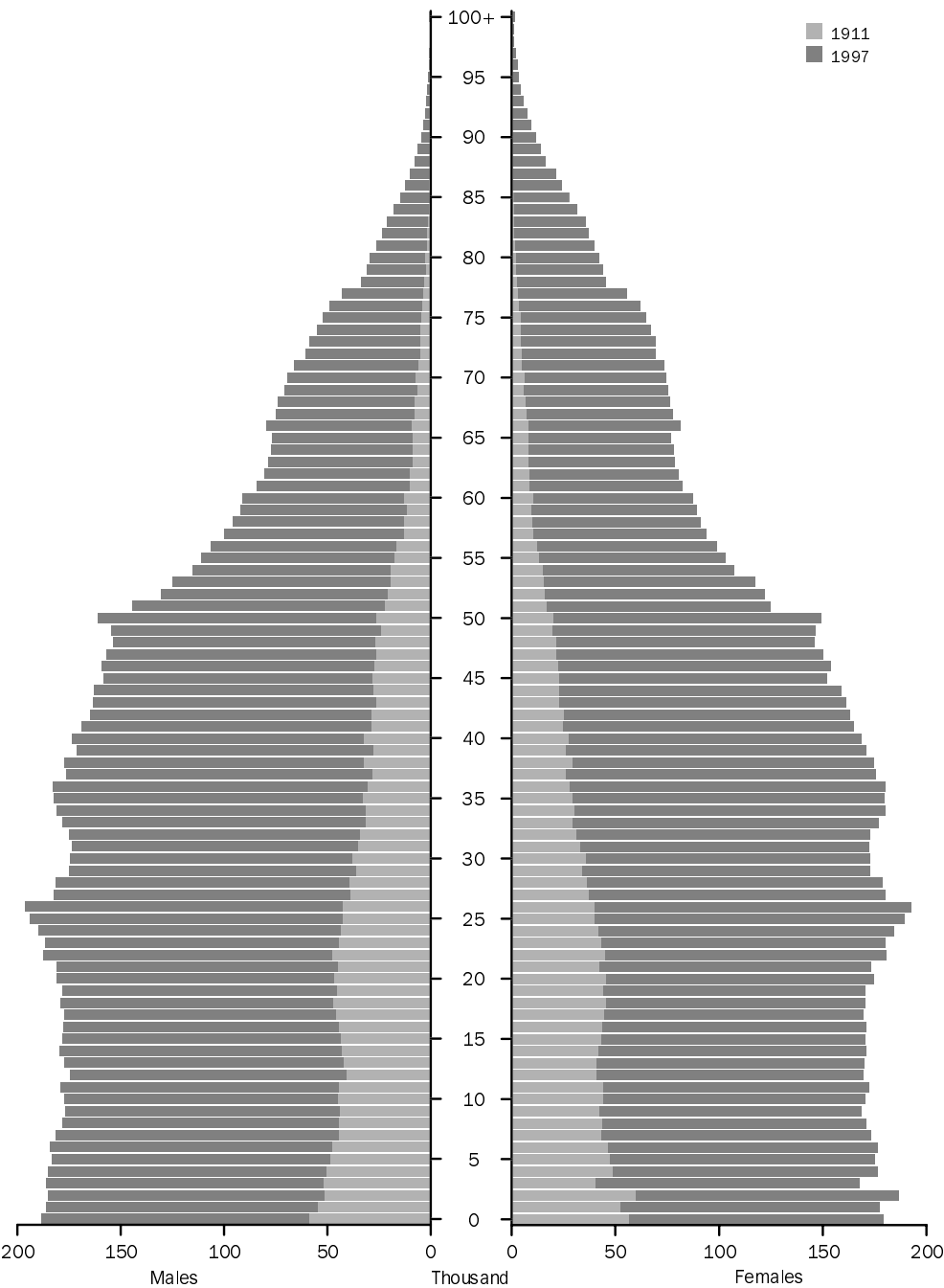
In 1911, 43% of Australians lived in rural areas. This proportion fell steadily, and by 1976 14% of the population lived in rural areas. Between 1976 and 1991 the decline appeared to have halted, and the proportion of people living in rural areas increased slightly (see graph 5.11). This was mainly due to people moving to rural areas surrounding the cities, but still working in the city. However, the 1996 Census showed a slight drop in the proportion of people living in rural areas.

### Age and sex of the population

Since the turn of the century the population at all ages has grown significantly, but it has also aged. This is illustrated in graph 5.12 for the years 1911 and 1997.

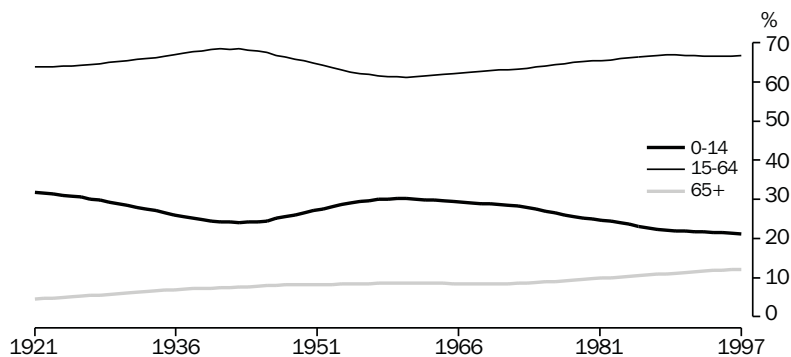
Since the first half of the century, Australians have been having smaller families, so there has been a fall in the proportion of children. In 1921, 32% of the population were aged under 15. By 1997, this had fallen to around 21%. Conversely, the proportion of the population aged 65 and over has increased markedly. In 1921, 4% of the population were aged 65 and over, but by 1997 this had increased to 12%. These features are illustrated in graph 5.13.

5.12 PROFILE OF AUSTRALIA'S POPULATION, 1911—97



Source: Australian Demography (a Commonwealth Bureau of Census & Statistics publication); Population by age and sex, Australia, States and Territories (3201.0).

5.13 PROPORTION OF POPULATION IN AGE GROUPS



Source: *Australian Demography* (a Commonwealth Bureau of Census & Statistics publication); *Australian Demographic Statistics* (3101.0).

### Population projections

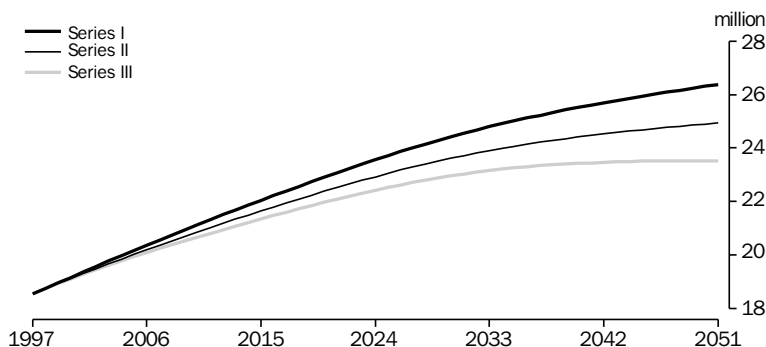
The ABS has published projections of the Australian population to the year 2051, based on a combination of assumptions concerning future levels of births, deaths and migration. Three main series of projections have been compiled, based on differing levels of these variables.

Series I assumes an annual net overseas migration gain of 90,000, small net internal migration gains and losses for States and Territories, and that the total fertility rate falls to 1.75 births per woman by 2005–06, and then remains constant. Series II assumes an annual net overseas migration gain of 70,000, medium net internal migration gains and losses for States and Territories, and that the total fertility rate falls to 1.75 births per woman by 2005–06, and then remains constant. Series III assumes an annual net overseas migration gain of 70,000,

large net internal migration gains and losses for States and Territories, and that the total fertility rate declines to 1.6 births per woman in 2005–06, and then remains constant. All series assume that the decline in mortality experienced between 1987–91 and 1992–96 would continue to 2005–06. From 2005–06 onwards, the average rates of decline experienced in successive five-year periods from 1967–71 to 1992–96 would be experienced. By 2051, life expectancy of males is assumed to be 82.0 years and of females 86.1 years.

Graph 5.14 shows that Australia's population is projected to grow from 18.5 million in 1997 to around 19.3 million in 2001 and between 22.1 and 23.1 million in 2021. By 2051, the population is projected to rise to between 23.5 and 26.4 million. Although the rate of growth varies at different times during the

5.14 PROJECTED POPULATION OF AUSTRALIA , As at 30 June



Source: *Population Projections, 1997 to 2051* (3222.0).



projection period, there is a clear long-term trend of it declining from 1.2% in 1996–97 to between 0.0% and 0.3% by 2051. The reason for this slowing in growth is mainly a projected decline in the natural increase (births minus deaths) of the population. This decline is largely a result of the increasing number of deaths occurring in a rapidly ageing population as well as to the low and declining fertility.

The populations of most States and Territories are expected to increase over the projection period, with the largest increases in the Northern Territory (between 84% and 154%), followed by Queensland (between 76% and 90%) and Western Australia (between 67% and 74%).

These levels of increase are well above the national average of between 27% and 42%.

Tasmania is the only State or Territory where the population is expected to decline under each of the projection series. Under Series II, the medium projection, the population of South Australia is also expected to decline. Tasmania's population is projected to decline by 35% by 2051, from 473,500 in 1997 to 309,700 in 2051. South Australia's population is expected to number 1.4 million in 2051, a 5% decline from its 1997 level of 1.5 million.

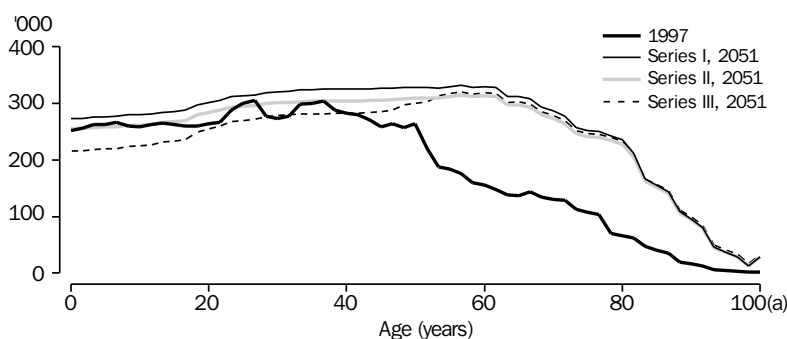
These projections are summarised in table 5.15.

**5.15 ACTUAL AND PROJECTED POPULATION—As at 30 June**

	1997	2021				2051	
	Actual	Series I	Series II	Series III	Series I	Series II	Series III
Capital city/balance of State	'000	'000	'000	'000	'000	'000	'000
Sydney	3 934.7	5 128.3	4 743.4	4 547.9	6 212.8	5 269.4	4 732.0
Balance of New South Wales	2 339.7	2 555.4	2 617.8	2 617.2	2 469.3	2 591.5	2 541.6
<i>Total New South Wales</i>	6 274.4	7 683.7	7 361.2	7 165.1	8 682.1	7 860.9	7 273.5
Melbourne	3 321.7	4 077.9	3 886.0	3 722.8	4 566.0	4 084.5	3 641.9
Balance of Victoria	1 283.5	1 384.4	1 322.4	1 283.5	1 309.8	1 157.5	1 051.5
<i>Total Victoria</i>	4 605.1	5 462.3	5 208.4	5 006.3	5 875.8	5 242.0	4 693.4
Brisbane	1 548.3	2 173.9	2 236.9	2 262.0	2 782.3	2 924.7	2 938.2
Balance of Queensland	1 852.9	2 555.2	2 596.2	2 726.8	3 188.3	3 278.5	3 515.7
<i>Total Queensland</i>	3 401.2	4 729.2	4 833.1	4 988.8	5 970.6	6 203.2	6 454.0
Adelaide	1 083.1	1 183.7	1 145.6	1 087.3	1 155.7	1 060.2	910.9
Balance of South Australia	396.7	425.4	402.6	381.7	395.0	340.0	286.2
<i>Total South Australia</i>	1 479.8	1 609.2	1 548.2	1 469.1	1 550.7	1 400.2	1 197.1
Perth	1 319.0	1 848.7	1 833.2	1 824.0	2 342.6	2 300.5	2 241.4
Balance of Western Australia	479.2	636.4	640.2	628.9	790.5	797.4	754.5
<i>Total Western Australia</i>	1 798.1	2 485.2	2 473.5	2 452.9	3 133.1	3 097.9	2 996.0
Hobart	195.5	193.7	179.0	162.7	159.9	125.5	86.7
Balance of Tasmania	278.0	274.1	259.1	228.0	221.0	184.1	110.8
<i>Total Tasmania</i>	473.5	467.7	438.1	390.7	380.9	309.7	197.5
Darwin	84.3	103.1	143.9	145.8	128.8	235.5	235.0
Balance of Northern Territory	102.9	149.7	145.5	162.5	215.1	204.6	241.1
<i>Total Northern Territory</i>	187.1	252.8	289.4	308.3	343.9	440.1	476.0
<i>Total Australian Capital Territory</i>	309.8	385.1	363.4	304.5	443.0	387.3	239.6
<b>Total Australia</b>	<b>18 532.2</b>	<b>23 078.9</b>	<b>22 519.0</b>	<b>22 089.4</b>	<b>26 383.8</b>	<b>24 944.7</b>	<b>23 530.4</b>

Source: Population Projections, 1997 to 2051 (3222.0).

## 5.16 AGE STRUCTURE OF THE POPULATION



(a) The 100 years age group includes all ages 100 years and over and therefore is not strictly comparable with single year ages in the rest of the graph.

Source: *Population Projections, 1997 to 2051* (3222.0).

The projections show that the ageing of the population, which is already evident, is set to continue. The 1997 median age of 34.3 years is projected to increase to between 40.1 and 41.1 years in 2021 and between 43.7 and 46.2 years in 2051.

The age structure of the population will change noticeably by 2051. Graph 5.16 shows a heavier concentration in the ages 50 years and over and smaller increases or slight declines in the younger ages.

The proportion of the population aged 65 and over is expected to increase substantially, from 12% in 1997 to between 24% and 26% in 2051. The proportion aged 85 and over is also expected to almost double, from 10% in 1997 to about 19% in 2051.

## Births, deaths and marriages

This section explores the issues of family formation and dissolution. It examines the structure of Australian families and the factors that change them, in particular births, deaths, marriages and divorces.

The numbers of births and deaths registered have both risen over the past 20 years, in line with population increases and the changing characteristics of the Australian population.

Trends in the numbers of marriages registered and divorces granted have fluctuated over the past two decades, although the number of marriages has tended to decrease, while the number of divorces has tended to increase (see table 5.17). The 1976 peak in the number of divorces registered was largely due to the introduction of the Family Law Act during that year.

## 5.17 SUMMARY STATISTICS FOR BIRTHS, DEATHS, MARRIAGES AND DIVORCES

Year	Live births	Deaths	Registered marriages	Divorces
1976	227 810	112 662	109 973	63 230
1981	235 842	109 003	113 905	41 412
1986	243 408	114 981	(a)114 913	39 417
1991	257 247	119 146	113 869	45 652
1992	264 151	123 660	114 752	45 729
1993	260 229	121 599	113 255	48 363
1994	258 051	126 692	111 174	48 312
1995	256 190	125 133	109 386	49 712
1996	253 834	128 719	106 103	52 466
1997	253 673	128 944	106 735	51 288

(a) This figure was affected by late registrations in NSW.

Source: *Australian Demographic Trends* (3102.0); *Births, Australia* (3301.0); *Deaths, Australia* (3302.0); *Marriages and Divorces, Australia* (3310.0).

Fertility and mortality patterns have changed significantly over the past 50 years (see table 5.18). In 1978, Australia's total fertility rate fell below two babies per woman—below the population replacement level of 2.1 babies per woman—for the first time since records have been kept. It has remained below replacement level ever since, declining over the last two decades. The age of mothers and the proportion of births outside marriage have both increased significantly.

Australia has also experienced a decline in mortality and an associated increase in life expectancy. Females have a greater life expectancy than males. This difference has been attributed to both biological and environmental factors. Females are estimated to have a genetic

advantage of about two years of life over males (Hugo 1986). The remaining difference can be attributed to differences between males and females in behavioural and lifestyle patterns. For example, males have higher death rates from accidents and smoking-related diseases such as heart disease and cancer (Pollard 1986).

As shown in table 5.19, recent trends show that Australians are getting married later. The median ages of brides and bridegrooms have increased from 22.5 and 25.3 years, respectively, in 1947 to 25.9 and 27.8 years in 1997. After a decrease following the introduction of the *Family Law Act* in 1976, the median age of divorcing couples has risen, along with the median duration of the marriages ending in divorce.

### 5.18 SELECTED SUMMARY MEASURES OF FERTILITY AND MORTALITY

Year ended 31 December	Fertility			Mortality	
	Total fertility rate(b)	Female net reproduction rate(c)	Percentage of ex-nuptial births(d)	Life expectancy at birth(a)	
				Males	Females
1947	3.08	1.42	—	66.07	70.63
1954	3.19	1.50	4.0	67.14	72.75
1961	3.55	1.67	4.0	67.92	74.18
1966	2.88	1.36	5.1	67.63	74.15
1971	2.87	1.36	7.4	68.10	74.80
1976	2.06	0.98	9.3	69.56	76.56
1981	1.94	0.93	10.1	71.23	78.27
1986	1.87	0.90	13.2	72.74	79.20
1989	1.84	0.88	16.8	73.32	79.60
1990	1.91	0.91	20.2	73.87	80.06
1991	1.85	0.89	21.9	74.40	80.39
1992	1.89	0.91	23.0	74.46	80.40
1993	1.87	0.90	24.0	74.99	80.86
1994	1.85	0.88	24.9	75.04	80.94
1995	1.82	0.88	26.6	(e) 74.95	(e) 80.84
1996	1.80	0.86	27.4	75.22	81.05

(a) For Census years 1947 to 1986 figures are based on Official Life Tables calculated by the Australian Government Actuary. For years from 1986 to 1994 figures are based on life tables calculated by the ABS. (b) The number of children a woman would bear during her lifetime if she experienced current age-specific fertility rates at each age of her reproductive life. (c) The number of daughters a woman would bear if she was subject to current female age-specific fertility rates and to predetermined mortality rates. (d) Proportion of total live births. (e) Values for life expectancy at birth refer to the period 1993–95. The life tables were constructed jointly by the Australian Government Actuary and the ABS.

Source: *Australian Demographic Statistics* (3101.0).

**5.19 SELECTED SUMMARY MEASURES OF MARRIAGES AND DIVORCES, Median Age**

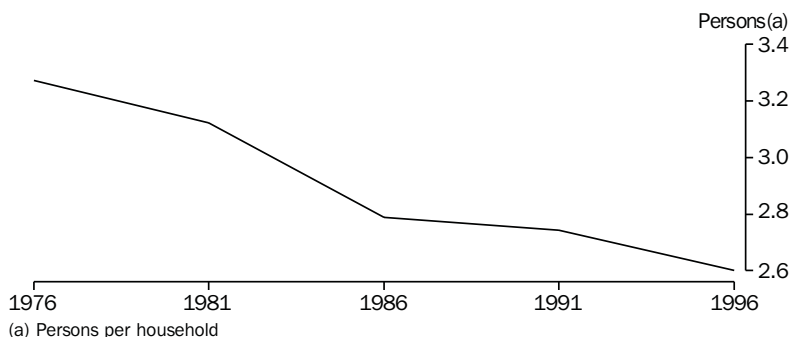
Year ended 31 December	Marriages						Divorces		
	First marriage of		All marriages of		At marriage		At date decree made absolute		Median duration of marriage (years)
	Bridegroom	Bride	Bridegroom	Bride	Husband	Wife	Husband	Wife	
1947	25.3	22.5	26.0	23.0	n.a.	n.a.	n.a.	n.a.	n.a.
1954	25.0	22.0	25.6	22.6	n.a.	n.a.	37.8	34.5	11.6
1961	24.3	21.4	24.9	21.8	24.7	21.7	38.7	35.9	12.6
1966	23.8	21.2	24.2	21.5	24.4	21.4	40.4	36.9	13.9
1971	23.4	21.1	23.8	21.4	23.7	21.0	37.9	34.4	12.5
1976	23.6	21.2	24.9	22.2	23.4	21.0	36.2	33.1	11.0
1981	24.4	22.1	25.9	23.3	23.5	20.9	35.5	32.8	10.2
1986	25.6	23.5	27.3	24.9	24.2	21.6	37.5	34.7	10.6
1989	26.3	24.2	28.0	25.7	24.6	22.0	38.0	35.1	10.2
1990	26.5	24.3	28.2	25.9	24.7	22.1	38.2	35.3	10.1
1991	26.7	24.5	28.4	26.0	24.8	22.3	38.4	35.5	10.3
1992	26.9	24.7	28.7	26.3	25.0	22.4	38.7	35.9	10.5
1993	27.0	24.8	28.8	26.4	25.2	22.6	39.3	36.4	10.7
1994	27.2	25.1	29.0	26.6	25.4	22.8	39.7	36.8	10.9
1995	27.3	25.3	29.2	26.8	25.6	23.0	39.9	37.1	11.0
1996	27.6	25.7	29.6	27.2	25.8	23.2	40.2	37.4	11.0
1997	27.8	25.9	29.7	27.5	25.8	23.3	40.3	37.6	11.1

Source: Australian Demographic Statistics (3101.0); Marriages and Divorces, Australia (3310.0).

**Households and families**

In 1996, there were an estimated 6,898,000 households in Australia. Over the past 20 years, the average size of households has fallen significantly (see graph 5.20). The number of

one person households has grown (due largely to the ageing of the population), as has the number of one parent families. Couples having smaller families have also contributed to the fall in household size.

**5.20 AVERAGE HOUSEHOLD SIZE**

Source: Census of Population and Housing, 30 June 1981: Summary Characteristics of Persons and Dwellings (2443.0); Household Estimates, Australia (3229.0); Australian Demographic Statistics (3101.0).

**5.21 FAMILY TYPE—1976–96**

	1976(a)	1981(a)	1986(a)	1991(a)	1996
Family type	%	%	%	%	%
One parent family with dependent children	6.5	8.6	7.8	8.8	9.9
Couple only	28.0	28.7	30.3	31.4	34.1
Couple with dependent children	48.4	46.6	44.8	44.4	40.6
Couple with non-dependent children only	11.1	10.0	10.9	9.5	9.0
Other families	5.9	6.0	6.2	5.9	6.4
Total	100.0	100.0	100.0	100.0	100.0

(a) Excludes caravan park dwellers.

Source: 1976–91: *Australian Social Trends*, 1994 (4102.0); 1996. *Census of Population and Housing*.

In 1976, 60% of families were made up of couples with children. By 1996, this had fallen to 50% (table 5.21). Part of this change can be attributed to the increase in one parent families with dependent children, but most of the change is due to the increase in the proportion of couple only families. People are having children later in life, and are living longer. Therefore they are spending more time living in couple only families, both before they have children and after their children have left home.

However, children are leaving home later. In 1981, 34% of children aged 20–24 lived with their parents. By 1991 this had increased to 40%. This increase has, to some extent, countered the fall in the proportion of families made up of couples with non-dependent children only.

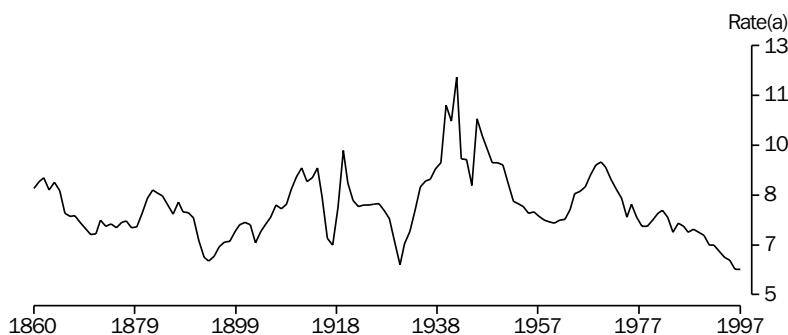
## Marriages

The crude marriage rate in Australia (the number of registered marriages or weddings per 1,000 population) has fluctuated since it was first

recorded in the 1860s. Broadly, the crude marriage rate has followed the pattern of prevailing economic and social conditions. It has fallen in times of depression or recession (e.g. in the 1890s and 1930s), and increased in times of prosperity such as the gold rush in the 1860s and the immediate post-war years of the early 1920s and late 1940s. Marriage rates have also increased during times of war. The 1997 crude marriage rate of 5.8 marriages per 1,000 population, the same as in 1996, is the lowest on record, while the highest crude marriage rate ever recorded was 12.0 per 1,000 in 1942.

The crude marriage rate has been declining since 1970. This decline in the marriage rate can be mainly attributed to changes in attitudes to marriage and living arrangements that have occurred since then.

The fluctuations in the crude marriage rate between 1860 and 1997 are shown in graph 5.22.

**5.22 CRUDE MARRIAGE RATE**

(a) Rate per 1,000 population.

Source: *Australian Social Trends* (4102.0); *Marriages and Divorces, Australia* (3310.0).

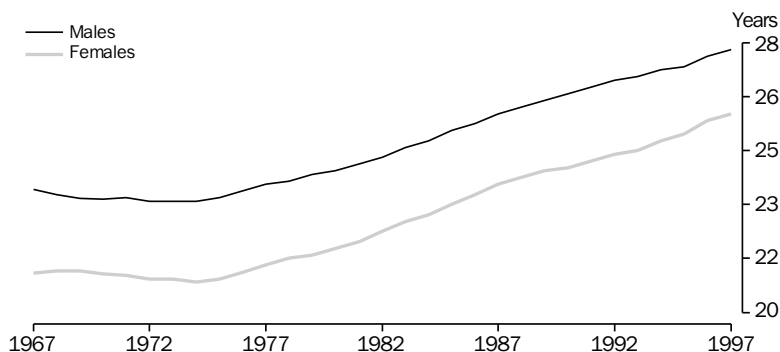
Between 1977 and 1997, the median age of brides entering their first registered marriage increased from 21.4 years to 25.9 years, while for grooms the median age at first marriage increased from 23.8 years to 27.8 years (graph 5.23). Part of this increase can be attributed to the increasing incidence of de facto relationships. Another factor is that young people are staying in education longer.

Traditionally, grooms have been older than their brides. However the difference between the

median ages at marriage is slowly narrowing. In 1997, the difference between the median ages of brides and grooms was (all marriages) 2.2 years, compared to 2.6 years in 1967 and 3.1 years in the period 1921–25.

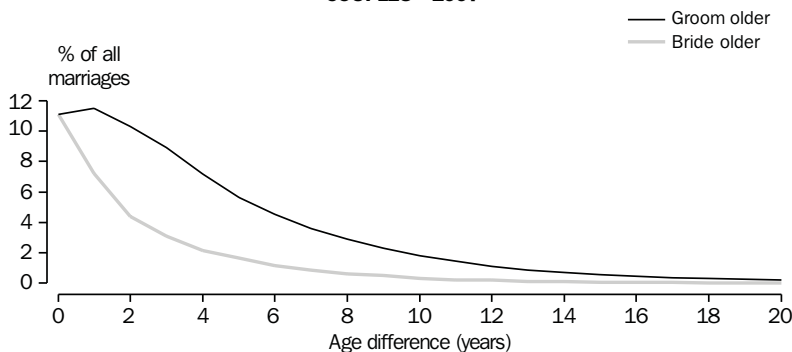
In 66% of all marriages in 1997, the groom was older than the bride. However, there was a strong tendency for couples to be about the same age, with 45% of couples being within two years of each other, and only 8% being more than ten years apart in age (graph 5.24).

**5.23 MEDIAN AGE AT FIRST MARRIAGE**



Source: Australian Social Trends (4102.0); Marriages and Divorces, Australia (3310.0).

**5.24 AGE DIFFERENCE BETWEEN MARRYING COUPLES—1997**



Source: Unpublished data, Marriages.

### De facto relationships

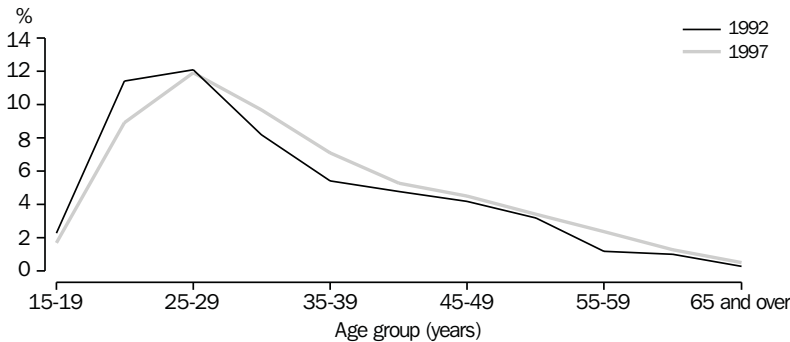
Between 1992 and 1997, the number of people in de facto relationships rose by 6.4% from 710,800 to 756,500 people. In 1997, de facto partners represented 9.1% of all persons living in couple relationships (up from 8.5% in 1992) and 5.3% of persons aged 15 years and over (the same as in 1992). The proportion in de facto relationships peaked among people aged 25–29. It was also high in the adjacent age groups and then fell away to lower levels with increasing age (see graph 5.25). Of all de facto partners in 1997, 56% were aged 20–34.

De facto partnering has arisen as a precursor or alternative to first marriage and as an alternative to remarriage following separation, divorce or

widowhood. Some couple relationships, such as that between a boyfriend and girlfriend who live together but do not consider their relationship to be marriage-like, are classified as de facto relationships.

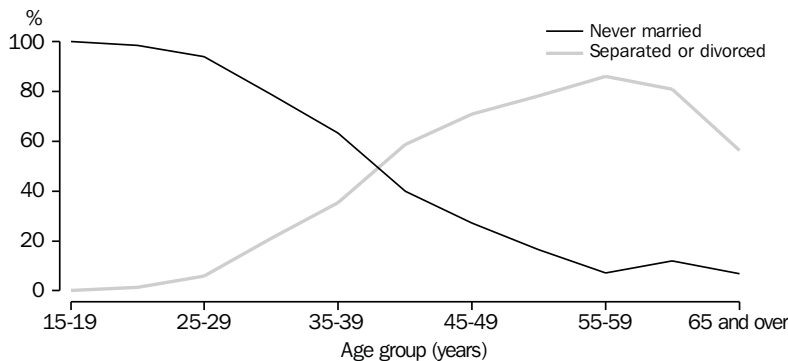
Of all people in de facto relationships in 1997, 69% were not previously registered as married and 29% were either separated or divorced. The likelihood of being never married was higher among those aged under 35, counterbalanced by higher proportions of separated and divorced de facto partners aged 35 and over (see graph 5.26). In 1997, 46% of de facto married couples had children, compared with 39% in 1992.

**5.25 DE FACTO PARTNERS IN THE POPULATION**



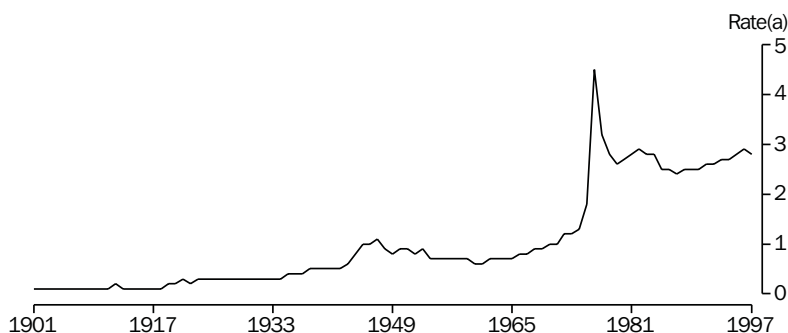
Source: Unpublished data, 1992 Survey of Families in Australia and 1997 Family Characteristics Survey.

**5.26 PERSONS IN DE FACTO RELATIONSHIPS—1997**



Source: Family Characteristics, Australia (4442.0).

## 5.27 CRUDE DIVORCE RATE



(a) Rate per 1,000 population.

Source: *Marriages and Divorces, Australia (3310.0)*.

## Divorces

The *Family Law Act 1975* allows only one ground for divorce: irretrievable breakdown of the marriage, measured as the separation of the spouses for at least one year. The implementation of this law resulted in a large increase in the divorce rate in 1976. The rate then declined until 1979 as the backlog of applications was cleared. Since then the crude divorce rate has fluctuated between 2.4 and 2.9 divorces per 1,000 population (see graph 5.27). The pattern of divorces per 1,000 married couples is very similar, although data are not available before 1981. In 1997 there were 12.5 divorces per 1,000 married couples.

About 43% of all marriages are likely to end in divorce; 8% within five years of marriage, 19% within ten years, 32% within 20 years and 39% within 30 years. Remarriages following divorce have the highest risk of divorce. The probability of divorce is slightly lower for first marriages and much lower for remarriages following widowhood.

## Births

In 1903, when the crude birth rate was lower than it had ever been before, the Royal Commission On the Decline in the Birth-rate and On the Mortality of Infants in New South Wales was appointed. It reported in 1904 and concluded that '...the cause or causes of the Decline of the Birth-rate must be a force or forces over which the people themselves have control...'. In other words, couples were limiting the size of their families.

At the turn of the century there were 117 births per 1,000 women of child bearing age (15–44 years). This approximates a total fertility rate of 3.5 babies per woman. By 1924 the total fertility rate was 3.0 and falling.

In 1934, in the middle of the Great Depression, the total fertility rate fell to 2.1 babies per woman. It then increased during the second half of the Depression, as women who had deferred childbearing in the early years of the Depression



began to have children. Fertility increased through World War II and the 1950s, and peaked in 1961 when the total fertility rate reached 3.6 babies per woman. This period of high fertility is known as the baby boom (see graph 5.28).

After the 1961 peak, the total fertility rate fell rapidly, to 2.9 babies per woman by 1966. This fall can be attributed to changing social attitudes, in particular a change in people's perception of desired family size, facilitated by the contraceptive pill becoming available.

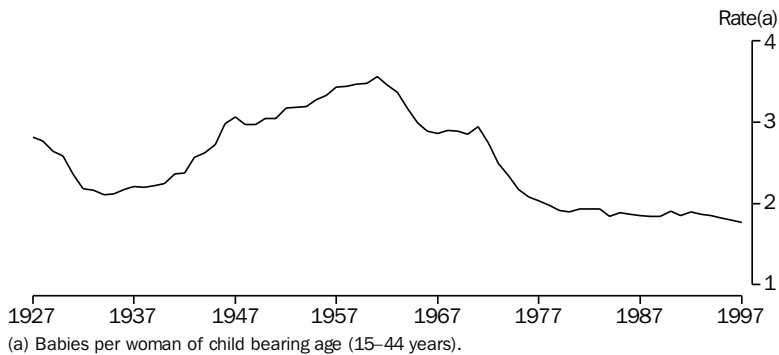
During the 1970s, the total fertility rate dropped again, falling to below replacement level in 1976 where it has remained since. This fall was more marked than the fall in the early 1960s and has been linked to the increasing participation of

women in the labour force, coupled with changing attitudes to family size, standard of living and lifestyle choices.

Women are starting childbearing later in life, and are having fewer children. In 1966, peak fertility was among 25 year old women, with 21% having babies. By 1996, peak fertility was among 29 year old women, but only 13% had babies. Primarily because fewer women are having large families, the proportion of all women having babies after they turn 40 has fallen (see graph 5.29).

In the last 30 years, there has been a fall in the proportion of births to teenage mothers, from 11.3% of all births in 1966 to 4.9% in 1996. The number of babies born to mothers aged 40 years or over has also fallen, from 2.6% in 1966 to 2.1% in 1996.

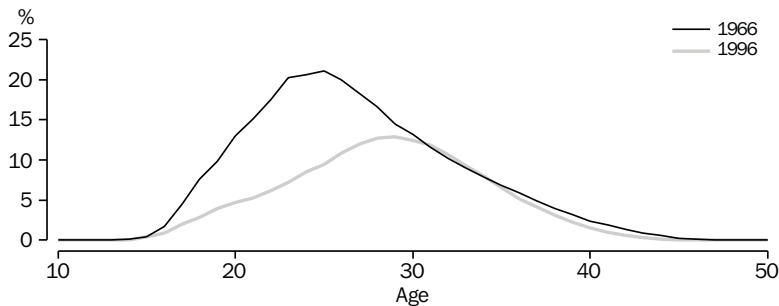
**5.28 TOTAL FERTILITY RATE**



(a) Babies per woman of child bearing age (15–44 years).

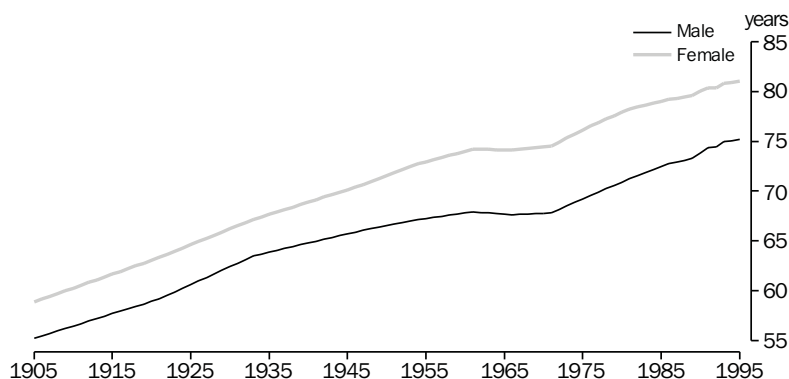
Source: Australian Demographic Trends (3102.0); Births, Australia (3301.0).

**5.29 PROPORTION OF WOMEN HAVING BABIES**



Source: Australian Demography (a Commonwealth Bureau of Census & Statistics publication), 1966; Births, Australia (3301.0); Population by Age and Sex, Australian States and Territories (3201.0).

## 5.30 LIFE EXPECTANCY AT BIRTH



Source: Australian Social Trends 1995 (4102.0): Deaths. Australia (3302.0).

## Deaths

In the period 1901–10, the average life expectancy of a new-born boy was 55 years and that of a new-born girl 59 years. By 1994–96, a new-born boy had a life expectancy of 75 years and a new-born girl 81 years. This represented an increase of 20 years for boys and 22 years for girls. Graph 5.30 shows the changes in life expectancy for males and females between 1905 and 1995.

The increase in life expectancy is mainly due to fewer deaths of young children, particularly in the first year of life (infant mortality). The high mortality rates among infants during the period 1901–10 (about one in ten died in the first year of life) kept the average life expectancy at birth low. Children who survived these early years then had life expectancies nearer to those currently experienced. For example, the life expectancy of a five year old boy improved by 13 years between 1901–10 and 1995 compared to 20 years improvement for a new-born boy.

The reduction in mortality in the early part of this century is attributed to improvements in living conditions, such as better water supplies, sewage systems, food quality and health education. The continuing reduction in mortality in the latter half of the century is attributed to improving social conditions and advances in medical technology such as mass immunisation and antibiotics.

The past two decades in particular have seen further increases in life expectancy. These increases are due in part to lower infant mortality, fewer deaths among young adults from

motor vehicle accidents and fewer deaths among older men from heart disease. The reduction in the number of deaths from heart disease is related to behavioural changes, such as dietary improvements, reduced smoking and increased fitness.

Females experience a life expectancy of about six years more than males. At the beginning of the century, the difference between male and female life expectancy was about four years, but increased to nearly seven years by the mid-1960s. This was mainly because, through behaviour modification, females appeared to have benefited more from declines in mortality experienced during this period throughout the Australian population. However, the life expectancy gap between male and female appears to have reduced in recent years (from 6.6 years in 1965–67 to 5.8 years in 1994–96). This may be related to the increasing number of females entering into the labour force and being exposed to the stresses and behaviours associated with males.

Australians have an average life expectancy which compares well with that experienced in other developed nations. Among the countries shown in table 5.31, the life expectancy at birth of Australian males and females (75 and 81 years respectively) was exceeded or matched by that in Hong Kong, Japan and Sweden. Life expectancy in Australia was greater than in Canada, Greece, Italy, New Zealand, the United Kingdom and the United States. Life expectancy in Australia was also greater than experienced in developing nations.

## 5.31 LIFE EXPECTANCY AT BIRTH, Selected Countries

Country		Males	Females
		years	years
<b>Australia</b>	<b>1994–96</b>	<b>75.2</b>	<b>81.0</b>
Canada	1985–87	73.0	79.8
China	1990–95	66.7	70.5
France	1992	72.9	81.2
Greece	1990–91	74.6	80.0
Hong Kong	1994	75.8	81.2
Indonesia	1990–95	61.0	64.5
Italy	1992	73.8	80.4
Japan	1994	76.6	83.0
Korea (Republic of)	1991	67.7	75.7
Malaysia	1990–95	68.7	73.0
New Zealand	1990–92	72.9	78.7
Papua New Guinea	1990–95	55.2	56.7
Singapore	1994	74.2	78.5
Sweden	1994	76.1	81.4
United Kingdom	1994	74.2	79.4
United States of America	1993	72.2	78.8
Viet Nam	1979	63.7	67.9

Source: Deaths, Australia (3302.0); United Nations 1997.

The standardised death rate removes the effect of different age structures from the crude death rate. Over the last 20 years, the standardised death rate in Australia has fallen by 33%, from ten to six deaths per 1,000 population (see table 5.32).

Of the States and Territories, the Northern Territory has had the highest standardised (and crude) death rate in the country for the last

two decades. This can largely be attributed to high death rates among the Indigenous population. In 1996, Indigenous persons made up 27% of the Northern Territory population, but accounted for 43% of its deaths.

The Australian Capital Territory had the lowest standardised death rate in 1996, 5% below the national rate.

## 5.32 STANDARDISED DEATH RATES

State/Territory	1976			1986			1996		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
New South Wales	13.1	7.7	9.8	10.2	6.1	7.8	8.3	5.0	6.4
Victoria	12.9	7.6	9.6	9.7	5.8	7.5	8.1	5.0	6.3
Queensland	12.8	7.5	9.6	9.6	5.7	7.4	8.1	4.9	6.4
South Australia	12.1	7.1	9.0	9.5	5.6	7.2	8.1	4.9	6.3
Western Australia	11.9	6.9	8.9	9.9	5.7	7.5	8.1	4.9	6.3
Tasmania	13.4	8.2	10.2	10.0	6.5	8.1	9.2	5.6	7.2
Northern Territory	15.5	13.4	14.2	12.0	8.2	10.2	10.5	7.1	8.8
Australian Capital Territory	12.5	6.7	8.8	9.7	6.2	7.7	7.8	4.9	6.1
<b>Australia</b>	<b>12.8</b>	<b>7.6</b>	<b>9.6</b>	<b>9.9</b>	<b>5.9</b>	<b>7.6</b>	<b>8.2</b>	<b>5.0</b>	<b>6.4</b>

Source: Deaths, Australia (3302.0).

## Australia's cultures

Australia has a rich cultural diversity. *Chapter 12, Culture and recreation* discusses the range of cultural activities in Australia.

At the 1996 Census, 3.9 million people had been born overseas in one of over 200 countries. A further 3.8 million had one or both parents born overseas. There were 2.6 million people who spoke a language other than English at home. The 1996 Census classified 92 religious denominations as well as 282 major languages, including 170 Aboriginal and Torres Strait Islander languages.

## The Aboriginal and Torres Strait Islander population

There are no accurate estimates of the population of Australia before European settlement. Many estimates were based on post-1788 observations of a population already reduced by introduced diseases and other factors. In 1930, the anthropologist Radcliffe-Brown postulated a minimum figure of 300,000. In 1980, L.R. Smith estimated the absolute minimum pre-1788 population at 315,000. Other estimates have put the figure at over one million, while recent archaeological finds suggest that a population of 750,000 could have been sustained.

Whatever the size of the Indigenous population before European settlement, it declined dramatically under the impact of new diseases, repressive and often brutal treatment, dispossession, and social and cultural disruption

and disintegration (*Year Book Australia, 1994*). The decline of the Indigenous population continued well into the twentieth century.

In the last 20 years, changing social attitudes, political developments, improved statistical coverage, and a broader definition of Indigenous origin have all contributed to the increased likelihood of people identifying as being of Aboriginal or Torres Strait Islander origin. This is reflected in the large increases in the number of people who are identified as Indigenous in each Census, increases in excess of those which can be attributed to natural increase in the Indigenous population. Table 5.33 shows the distribution of the Indigenous population in 1991 and 1996.

The Indigenous population has a very young age structure (graph 5.34). With 40% of the population aged under 15, and 3% aged over 65, it has a younger age structure than that of the total Australian population at the beginning of this century.

This age structure is largely a product of high fertility rates. During the 1960s, Indigenous women had, on average, about six children each. By the 1980s, this had fallen to about three children each, compared to 1.9 for all Australian women.

The age structure also reflects high death rates. For the period 1991–96, life expectancy of Aboriginal and Torres Strait Islander people at birth was about 57 years for males and 66 years for females.

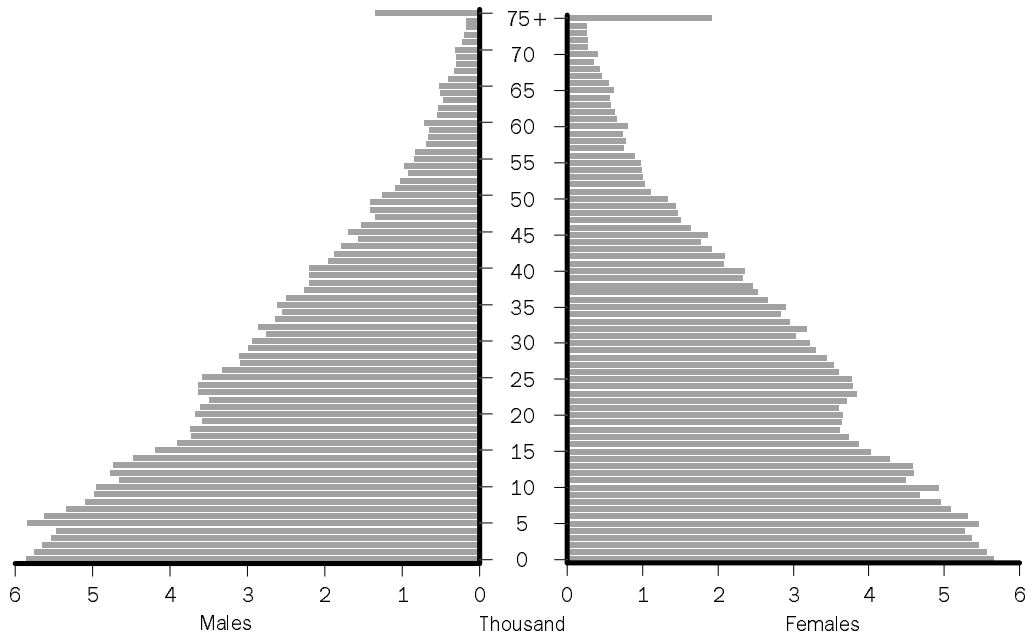
**5.33 ESTIMATES OF THE INDIGENOUS POPULATION—At 30 June**

State/Territory	1991(a)		1996(b)	
	no.	%	no.	%
New South Wales	75 020	26.5	109 925	28.5
Victoria	17 890	6.3	22 598	5.9
Queensland	74 214	26.2	104 817	27.2
South Australia	17 239	6.1	22 051	5.7
Western Australia	44 182	15.6	56 205	14.6
Tasmania	9 461	3.3	15 322	4.0
Northern Territory	43 754	15.4	51 876	13.4
Australian Capital Territory	1 616	0.6	3 058	0.8
<b>Australia(c)</b>	<b>283 560</b>	<b>100.0</b>	<b>386 049</b>	<b>100.0</b>

(a) Estimate based on the 1991 Census of Population and Housing. (b) Estimate based on the 1996 Census of Population and Housing. (c) Includes Jervis Bay Territory.

Source: *Experimental Estimates of the Aboriginal and Torres Strait Islander Population (3230.0)*.

### 5.34 AGE STRUCTURE OF THE INDIGENOUS POPULATION, 1996

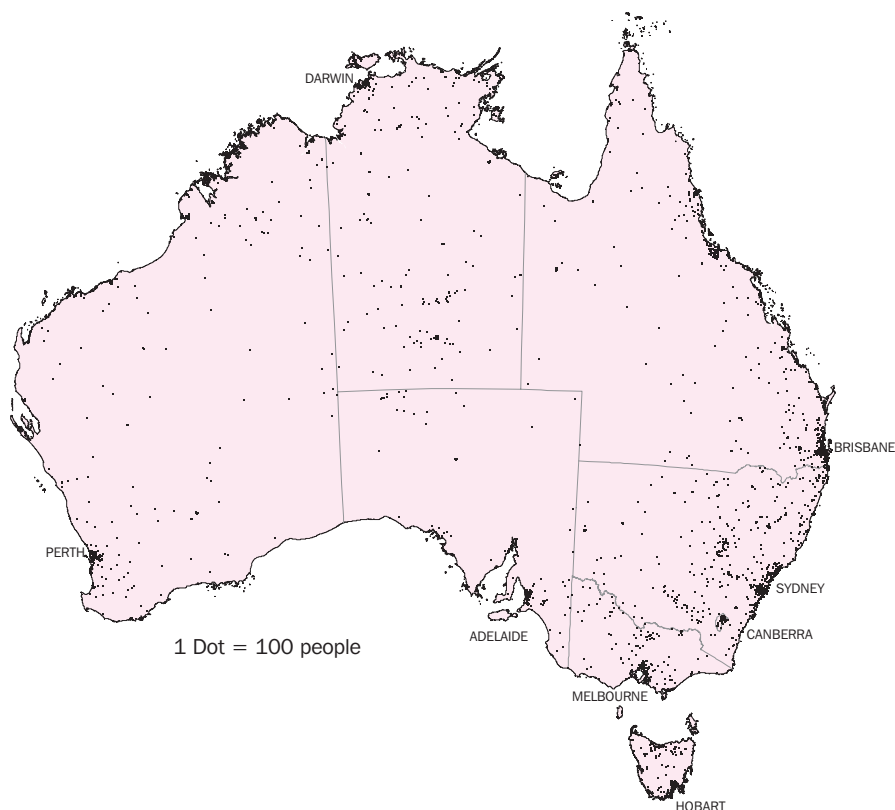


Source: Unpublished data, *Experimental Population Estimates*.

While most of the total population is concentrated along the east and (to a lesser extent) the south-west coasts, the Indigenous population is much more widely spread. About 90% of Australia's total population are contained within the most densely settled 2.6% of the continent. About 90% of Australia's Indigenous population live in areas covering 25% of the continent. This partly reflects the higher level of

urbanisation among the non-Indigenous population than the Indigenous population. However, Indigenous people are also much more likely to live in very remote areas than the rest of the population. Just over half of the continent contains 0.3% of the total population, and 3.1% of the Indigenous population (see maps 5.7 and 5.35).

## 5.35 DISTRIBUTION OF INDIGENOUS POPULATION(a)—1996



(a) Represents a random distribution within Statistical Local Area boundaries.

Source: 1996 Census of Population and Housing.

## Migration

Overseas migration plays an important role in changes in the population. Between 1992 and 1997, 1.2 million people arrived in Australia intending to stay for one year or more (table 5.36). This includes permanent (settler) arrivals, Australian residents returning from an overseas trip of 12 months or more, and overseas visitors intending to stay 12 months or more in Australia. About 746,000 people left Australia for overseas on a permanent or long term basis, including Australian residents emigrating or going overseas for 12 months or more, and overseas visitors leaving Australia after staying for 12 months or more.

Because population estimates include permanent and long-term movers and exclude short-term movers, adjustments are required for the net effect of changes in travel intention from short-term to permanent/long-term and vice versa. For example, an Australian resident may state on departure an intention to stay abroad for less than 12 months (a short-term movement). If this resident remains overseas for 12 months or more, he or she has changed their travel category to long-term and is regarded as a category jumper. Estimates for category jumping ensure that the estimated population truly reflects the usual resident population at any point in time.

**5.36 PERMANENT AND LONG-TERM MIGRATION—Five Years Ended 30 June**

	1982	1987	1992	1997
	no.	no.	no.	no.
Arrivals				
Permanent (settlers)	449 831	445 463	639 088	418 417
Long-term				
Australian residents	295 948	262 101	284 551	383 633
Overseas visitors	160 677	164 573	270 982	371 325
Permanent and long-term arrivals	906 456	872 137	1 194 621	1 173 375
Departures				
Permanent departures	110 923	107 540	130 227	140 660
Long-term				
Australian residents	263 812	246 764	304 606	337 639
Overseas visitors	98 728	124 761	190 811	262 925
Permanent and long-term departures	473 464	479 066	625 644	746 224
Category jumping	8 090	29 117	17 492	-70 523
Net overseas migration	441 085	422 190	586 436	356 628

Source: *Migration, Australia* (3412.0).

**5.37 BIRTHPLACE OF SETTLER ARRIVALS**

Country	'000	%
<b>1963–67</b>		
United Kingdom and Ireland	339.5	51.0
Greece	67.4	10.1
Italy	61.3	9.2
Yugoslavia	33.6	5.0
Malta	19.4	2.9
Germany	17.7	2.7
<b>1973–77</b>		
United Kingdom and Ireland	156.2	37.7
Lebanon	21.9	5.3
New Zealand	20.2	4.9
Yugoslavia	18.1	4.4
Greece	11.2	2.7
USA	10.9	2.6
<b>1983–87</b>		
United Kingdom and Ireland	88.9	19.3
New Zealand	53.0	11.5
Viet Nam	40.1	8.7
Philippines	22.3	4.8
South Africa	14.1	3.1
Poland	8.1	1.8
<b>1993–97</b>		
New Zealand	53.6	13.0
United Kingdom and Ireland	53.2	12.9
China	28.9	7.0
Viet Nam	21.0	5.1
Hong Kong	19.5	4.8
Philippines	17.2	4.2

Source: *Australian Demography* (a Commonwealth Bureau of Census & Statistics publication); *Overseas Arrivals and Departures, Australia* (3401.0).

Over the last 30 years, there has been a significant change in the source countries of settlers. In the 1960s, the top six countries of birth represented 81% of all settler arrivals to Australia, including 51% born in the United Kingdom and Ireland. In the 1990s, 47% came from the top six countries, with 13% born in the United Kingdom and Ireland (see table 5.37).

In 1996–97, 86,000 people arrived in Australia intending to settle. The majority of these (66%) arrived as part of the Migration Program. Another 12% arrived as part of the Humanitarian Program, while 20% were eligible to settle in Australia because of their New Zealand citizenship. The remaining 3% were in other categories such as overseas-born children of Australian citizens.

The number of visas issued to prospective settlers varies significantly from year to year, depending largely on the relative economic and political climate in Australia and source countries. So too does the balance between the types of visas issued. Skilled migration is a very volatile component of the migration intake. Table 5.38 shows that, in the six years to 1996–97, the Skilled Migration category ranged from 38% of settler arrivals in 1991–92 and 29% in 1992–93, to 23% four years later. In 1996–97, 29% of skilled immigrants came from North East Asia, while 26% came from Europe, especially the United Kingdom and Ireland. South East Asia and Africa also contributed a relatively high proportion of skilled immigrants to Australia, with 13% and 12% of the total intake respectively.

**5.38 SETTLER ARRIVALS, By Eligibility Category**

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Eligibility category	no.	no.	no.	no.	no.	no.
Family	48 621	32 102	33 580	37 078	46 458	36 490
Skilled	40 334	22 137	12 794	20 210	20 008	19 697
Humanitarian	7 157	10 939	11 350	13 632	13 824	9 886
New Zealand	8 201	8 355	9 616	13 618	16 234	17 501
Other	3 078	2 797	2 428	2 890	2 615	2 178
<b>Total</b>	<b>107 391</b>	<b>76 330</b>	<b>69 768</b>	<b>87 428</b>	<b>99 139</b>	<b>85 752</b>

Source: Department of Immigration and Multicultural Affairs.

In 1996-97, 43% of settlers came as part of the family component of Australia's immigration program. The birthplaces of these immigrants partly reflect past migration patterns. About 28% were born in Europe, with another 23% born in North-East Asia.

Of settlers arriving as part of the Humanitarian Program, 46% come from Europe, mostly the Former Yugoslav Republics. Nearly a quarter of immigrants on humanitarian visas had been born in North Africa and the Middle East.

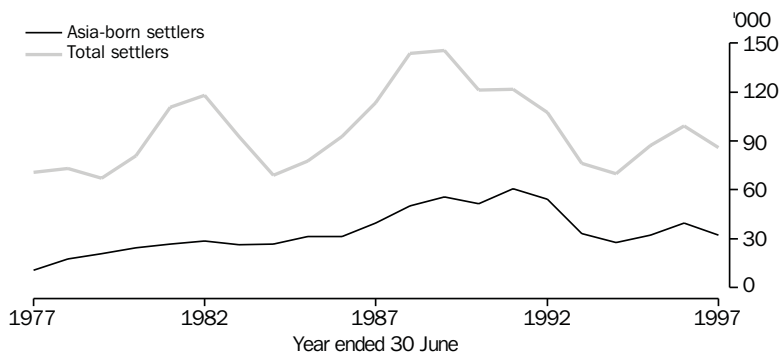
**Asia-born arrivals**

Over the last two decades, the countries of South-East Asia, North-East Asia and Southern Asia have become increasingly important sources of both settler and long-term visitor arrivals.

Before 1980, the number of settlers from Asia was small. With the final dismantling of the White Australia Policy in the early 1970s and acceptance of refugees from the Viet Nam war, the number of migrants from Asia began to increase.

Generally, the level of permanent arrivals from Asia has followed the patterns of total permanent arrivals, reflecting the constraints of the Migration and Humanitarian Programs. The number of arrivals born in Asia has fluctuated markedly, peaking between 1988-89 (55,700) and 1990-91 (60,900) (see graph 5.39). The proportion of arrivals from Asia has gradually risen over the last 20 years, from 15.2% in 1977 to a peak of 50.6% in 1991-92. In 1996-97, a total of 32,100 settlers born in Asia (37.4% of all settler arrivals) arrived in Australia.

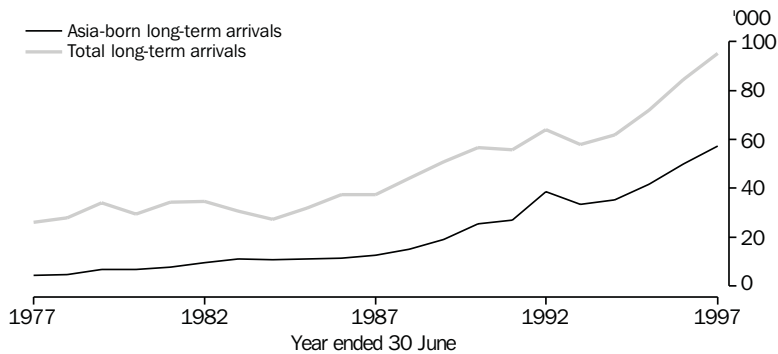
Graph 5.40 shows that levels of long-term visitor arrivals from Asia have increased greatly over the last ten years after being very low during the 1970s and early 1980s. Arrivals in 1996-97 (57,100 or 60.1% of all long-term visitor arrivals) were about 12 times as high as in 1976-77 and four times as high as in 1986-87. The main reason for this growth has been the increasing number of students travelling to Australia from Asia for educational purposes. In 1996-97, of the 57,100 long-term visitor arrivals from Asia, 77% came for education.

**5.39 ASIA-BORN SETTLER ARRIVALS**

Source: Migration, Australia (3412.0); unpublished data, Overseas Arrivals and Departures.



## 5.40 LONG-TERM ARRIVALS OF THE ASIA-BORN



Source: *Migration, Australia* (3412.0); unpublished data, *Overseas Arrivals and Departures*.

### Country of origin

Since the end of World War II, due to high levels of migration the population has increased rapidly, and the proportion of the population born overseas increased from 10% in 1947 to 23% at 30 June 1997 (table 5.41). As well as this increase, there has been a diversification of the population. In 1947, 81% of the overseas-born population came from the main English speaking countries (the United Kingdom and Ireland, New Zealand, South Africa, Canada and the United States), mainly from the United Kingdom and Ireland. By 30 June 1997, only 39% of the overseas-born population had been born in the main English speaking countries.

For the last few decades, the Italian, Greek and Dutch-born populations in Australia have been declining. There were large flows of people from these countries after World War II, and relatively little migration more recently. As these populations age, they experience high numbers of deaths. There are also significant numbers of people returning to their countries of birth in their retirement.

Preliminary population estimates for 1997 identified 23% of the population as overseas-born. The 1996 Census showed that a further 27% of persons born in Australia had at least one overseas-born parent, that is, they were second generation Australians.

## 5.41 MAIN COUNTRIES OF BIRTH OF THE POPULATION

Country	1947(a)	1954(a)	1961(a)	1971(a)	1981(b)	1991(b)	1997p(b)
	'000	'000	'000	'000	'000	'000	'000
United Kingdom and Ireland	541.3	664.2	755.4	1 088.3	1 175.7	1 244.3	1 214.1
New Zealand	43.6	43.4	47.0	80.5	175.7	286.4	325.5
Italy	33.6	119.9	228.3	289.5	285.3	272.0	256.7
Former Yugoslav Republic	5.9	22.9	49.8	129.8	156.1	168.0	197.6
Viet Nam	n.a.	n.a.	n.a.	0.7	43.4	124.8	165.4
Greece	12.3	25.9	77.3	160.2	153.2	147.4	141.7
Germany	14.6	65.4	109.3	110.8	115.2	120.4	121.5
China	6.4	10.3	14.5	17.6	26.8	84.6	130.3
Hong Kong	n.a.	n.a.	n.a.	n.a.	16.3	(c)62.4	(c)78.7
Netherlands	2.2	52.0	102.1	99.3	100.5	100.9	94.7
Philippines	0.1	0.2	0.4	2.6	15.8	79.1	104.7
Total overseas	744.2	1 286.5	1 778.8	2 579.3	3 111.0	3 965.3	4 322.6
Australia	6 835.2	7 700.1	8 729.4	10 176.3	11 812.3	13 318.8	14 209.6
<b>Total population</b>	<b>7 579.4</b>	<b>8 986.5</b>	<b>10 508.2</b>	<b>12 755.6</b>	<b>14 923.3</b>	<b>17 284.0</b>	<b>18 532.2</b>

(a) Census counts. (b) Estimated resident population. (c) Includes Macao.

Source: *Australia in Profile* (2821.0); *Estimated Resident Population by Country of Birth, Age and Sex, Australia* (3221.0); *Migration, Australia* (3412.0).

## 5.42 FIRST AND SECOND GENERATION AUSTRALIANS, By Country of Birth—1996

Country	Overseas-born(a)	Second generation Australians	Total
	'000	'000	'000
United Kingdom and Ireland	1 124.0	1 522.9	2 647.0
Italy	238.2	333.9	572.1
New Zealand	291.4	200.0	491.4
Former Yugoslav Republic	175.4	131.3	306.7
Greece	126.5	153.9	280.5
Germany	110.3	139.3	249.6
Netherlands	87.9	142.5	230.4
Viet Nam	151.1	46.8	197.8
China	111.0	40.2	151.2
<b>Total population</b>	<b>3 901.9</b>	<b>3 595.3</b>	<b>7 497.2</b>

(a) The population identified in this table is based on Census counts, and not the estimated resident population; it therefore has slightly lower levels than the total overseas-born population in table 5.41.

Source: Unpublished data, 1996 Census of Population and Housing.

The variety and size of second generation populations reflect past migration and intermarriage patterns. In long established migration groups, such as those from the United Kingdom and Ireland, and from northern and southern Europe, second generation Australians form more than half the total birthplace group. In more recently arrived groups, such as those born in Viet Nam, second generation Australians form a smaller part of the birthplace group. This is illustrated in table 5.42.

### Citizenship

The concept of Australian citizenship is less than 50 years old. Prior to the *Nationality and Citizenship Act 1948* (since renamed the *Australian Citizenship Act 1948*) coming into effect on Australia Day 1949, Australians were simply British subjects. Between that day and June 30 1998, 3.1 million grants of citizenship were made.

In 1994, the Joint Standing Committee on Migration stated "Citizenship is the cornerstone of national identity. It defines an individual's legal relationship with Australia, and signals an individual's membership of the Australian community... citizenship represents an individual's commitment to Australia, including the principles on which Australian society is based."

Generally, older people, and those who have lived in Australia a long time, tend to have higher citizenship rates than younger, more recently arrived migrants. For example, the 1996 Census showed that 96% of the Greek-born population, which is relatively old and has been in Australia

for a comparatively long time, had taken out Australian citizenship.

Standardising for these factors gives the citizenship rates that would be expected if a given overseas-born population had the same profile of age and period of residence as the total overseas-born population (see table 5.43). The standardised citizenship rate for the Greek-born population was 87%.

People born in the main English speaking countries, such as the United Kingdom and New Zealand, have very low standardised citizenship rates. This may be because "...the shared language, and strongly similar legal, political, and industrial relations arrangements of Australia and the other Anglo-American countries lead these immigrants to feel less need to make a choice of national identity." (Evans, M. 1988).

The United Kingdom and Ireland have consistently been the largest source of new Australian citizens since the early 1970s, with about one-third of all citizenship grants since 1970 (26.4% in 1996–97, as shown in table 5.44). However, between 1949 and 1965, only 4% of citizenship grants were made to former citizens of the United Kingdom and Ireland. Former Italian citizens made up 21% of new citizens in that period, followed by former citizens of the Netherlands (13%), the then USSR and Poland (both 12%). In the late 1960s, former citizens of the United Kingdom and Ireland increased their take-up of Australian citizenship and represented 10% of grants of citizenship between 1965 and 1970, third after former Italian citizens (21%) and former Greek citizens (13%).

## 5.43 CITIZENSHIP RATES, By Country of Birth—1996

Country	Persons '000	Citizenship rate %	Standardised citizenship rate(a) %
Viet Nam	151.1	88.5	89.6
Former Yugoslav Republic	175.4	87.5	87.3
Greece	126.5	96.1	87.3
China	111.0	48.6	76.3
Italy	238.2	78.8	65.6
Germany	110.3	75.8	63.1
Netherlands	87.9	77.7	60.4
United Kingdom	1 124.0	60.5	57.5
New Zealand	291.4	32.3	38.3
<b>Total overseas born</b>	<b>3 901.9</b>	<b>67.8</b>	<b>67.8</b>

(a) The rates of citizenship that would be expected if the population had the same age and period of residence profile as the total overseas born population.

Source: Unpublished data, 1996 Census of Population and Housing.

## 5.44 FORMER NATIONALITY, People Granted Australian Citizenship—1996–97

Citizenship	no.	%
British and Irish	28 572	26.4
Chinese	16 173	14.9
New Zealander	9 982	9.2
Vietnamese	5 083	4.7
Filipino	3 815	3.5
Indian	2 563	2.4
Fiji (citizen of)	1 721	1.6
United States (citizen of)	1 701	1.6
Sri Lankan	1 620	1.5
Iraqi	1 591	1.5
South African	1 578	1.5
Italian	1 101	1.0
Lebanese	1 076	1.0
Turkish	1 064	1.0
Iranian	891	0.8
Croatian	810	0.7
Canadian	809	0.7
Korean	789	0.7
Maltese	788	0.7
Ukrainian	778	0.7
Malaysian	764	0.7
Polish	722	0.7
Portuguese	675	0.6
Thai	663	0.6
Chilean	607	0.6
Bangladeshi	540	0.5
Pakistani	532	0.5
Greek	492	0.5
Egyptian	485	0.4
Afghan	447	0.4
German	412	0.4
Romanian	323	0.3
Salvadorian	322	0.3
Jordanian	220	0.2
Argentinian	206	0.2
Other countries (citizens of)	16 670	15.4
Stateless	1 681	1.6
<b>Total</b>	<b>108 266</b>	<b>100.0</b>

Source: Bureau of Immigration, Multicultural and Population Research, 'Australian Immigration: Consolidated Statistics and Immigration Update'.

## Religion

In 1983, the High Court of Australia defined religion as "a complex of beliefs and practices which point to a set of values and an understanding of the meaning of existence."

At the time of European settlement, the Aboriginal inhabitants followed their own religions which were animistic in nature, involving belief in spirits behind the forces of nature and the influence of ancestral spirit beings.

During the 1800s, European settlers brought their traditional churches to Australia. These included the Church of England (now the Anglican Church), and the Methodist, Catholic, Presbyterian, Congregationalist and Baptist churches. In 1838, German Lutherans arrived in South Australia. From the 1840s onwards, groups such as Mormons, Swedenborgians, Spiritualists, Christadelphians, Seventh-day Adventists, Christian Scientists and Jehovah's Witnesses arrived in Australia.

With the exception of a small but significant Lutheran element, Australian society in 1901 was predominantly Anglo-Celtic, with 40% of the population being Church of England, 23% Catholic, 34% other Christian and about 1.4% professing non-Christian religions. By the time of the Census in 1954 the population had more than doubled, but the profile was similar with 38% Church of England (Anglican), 23% Catholic, 28% other Christian denominations and 0.6% non-Christian religions.

In subsequent decades, further immigration to Australia reshaped the religious profile. The impact of migration from Europe in the aftermath of World War II led to an increase in affiliates of the Orthodox Churches, the forming of Reformed

bodies, and the growth in the number of Catholics, particularly from Italian migration, as well as the formation of ethnic parishes in many other denominations. More recently, immigration from South-East Asia and the Middle East has expanded Buddhist and Muslim numbers considerably, while also adding to the ethnic diversity in Christian groups. At the 1996 Census, Australians' religious affiliations were: 27% Catholic, 22% Anglican, 22% other Christian denominations and 3% non-Christian religions, with some 25% uncommitted or professing no religion.

The growth of the proportion choosing not to state their religion or stating that they had no religion has been an area of substantial change. In every Census taken in Australia, a voluntary question on religious affiliation has been asked. Since 1933, the voluntary nature of the religion question has been specifically stated. In 1971, the instruction 'if no religion, write none' was introduced. The percentage who stated no religion has increased from 0.4% of the population in 1911 to almost 17% at the 1996 Census. At the same time there has been a decrease in those who stated a Christian religion, from 96% in 1911 to 71% in 1996. Table 5.45 provides a summary of the major religious affiliations at each Census since 1911.

While Australia's population grew by 5.4% in the five years to 1996, stated affiliations to many religions grew at a far greater rate, and others declined.

Between the 1991 and 1996 Censuses, there was a 35.5% increase in the number stating that they had no religion. Anglican affiliates decreased by 115,455 (2.9%) while Catholic affiliates increased by 192,299 (4.2%). However both groups decreased their proportion of total religious affiliation. Other Christian religions which showed a decrease in affiliates were Presbyterian and Reformed (7.7%), Churches of Christ (4.2%), the Uniting Church (3.8%) and the Lutheran Church (0.4%).

The Christian groups that showed the largest percentage increases in affiliates were Pentecostal (16.0%) and Jehovah's Witness (11.6%).

Affiliates of other religions, while only 3.5% of the population in 1996, have shown the largest increases since the 1991 Census. Stated affiliation to Hinduism increased by 54.5%, to Buddhism by 42.9%, to Islam by 36.2% and to Judaism by 7.6%.

#### 5.45 MAJOR RELIGIOUS AFFILIATIONS

Census year	Christianity						Religious affiliation	Total '000
	Anglican	Catholic	Other	Total	Other religions	No religion	Not stated/ inadequately described	
	%	%	%	%	%	%	%	
1911	38.4	22.4	35.1	95.9	0.8	0.4	(a)2.9	<b>4 455.0</b>
1921	43.7	21.7	31.6	96.9	0.7	0.5	(a)1.9	<b>5 435.7</b>
1933	38.7	19.6	28.1	86.4	0.4	0.2	12.9	<b>6 629.8</b>
1947	39.0	20.9	28.1	88.0	0.5	0.3	11.1	<b>7 579.4</b>
1954	37.9	22.9	28.5	89.4	0.6	0.3	9.7	<b>8 986.5</b>
1961	34.9	24.9	28.4	88.3	0.7	0.4	10.7	<b>10 508.2</b>
1966	33.5	26.2	28.5	88.2	0.7	0.8	10.3	<b>11 599.5</b>
1971	31.0	27.0	28.2	86.2	0.8	6.7	6.2	<b>12 755.6</b>
1976	27.7	25.7	25.2	78.6	1.0	8.3	11.4	<b>13 548.4</b>
1981	26.1	26.0	24.3	76.4	1.4	10.8	11.4	<b>14 576.3</b>
1986	23.9	26.0	23.0	73.0	2.0	12.7	12.4	<b>15 602.2</b>
1991	23.8	27.3	22.9	74.0	2.6	12.9	10.5	<b>16 850.3</b>
1996	22.0	27.0	21.9	70.9	3.5	16.6	9.0	<b>17 752.8</b>

(a) Includes 'object to state'.

Source: Unpublished data, *Census of Population and Housing*.

## 5.46 RELIGIOUS AFFILIATION

	1991		1996		Growth
	No.	Proportion	No.	Proportion	
	'000	%	'000	%	%
Christianity					
Anglican	4 018.8	23.8	3 903.3	22.0	-2.9
Baptist	279.8	1.7	295.2	1.7	5.5
Catholic	4 606.7	27.3	4 799.0	27.0	4.2
Churches of Christ	78.3	0.5	75.0	0.4	-4.2
Jehovah's Witness	74.7	0.4	83.4	0.5	11.6
Lutheran	250.9	1.5	250.0	1.4	-0.4
Orthodox	474.9	2.8	497.0	2.8	4.7
Pentecostal	150.6	0.9	174.7	1.0	16.0
Presbyterian and Reformed	732.0	4.3	675.5	3.8	-7.7
Salvation Army	72.3	0.4	74.1	0.4	2.5
Uniting Church	1 387.7	8.2	1 334.9	7.5	-3.8
Other Christian	339.6	2.0	420.6	2.4	23.9
Buddhism	139.8	0.8	199.8	1.1	42.9
Hinduism	43.6	0.3	67.9	0.4	54.4
Islam	147.5	0.9	200.9	1.1	36.2
Judaism	74.3	0.4	79.8	0.4	7.6
Other religions	40.0	0.2	68.6	0.4	71.6
No religion	2 176.6	12.9	2 948.9	16.6	35.5
Not stated/inadequately described	1 762.1	10.5	1 604.7	9.0	-8.9
<b>Total</b>	<b>16 850.3</b>	<b>100.0</b>	<b>17 752.8</b>	<b>100.0</b>	<b>5.4</b>

Source: Unpublished data, 1991 and 1996 Census of Population and Housing.

These changes partly resulted from trends in immigration. In 1996, 48% of those who had arrived in Australia since 1991 were affiliated to Christianity, 23% had no religion, 8% were affiliated to Buddhism, 8% to Islam and 1% to Judaism.

Table 5.46 shows the breakdown of religious groupings by the number and percentage of affiliates at the 1991 and 1996 Censuses, and the growth which occurred during that five year period.

## Languages

English is Australia's national language. At the same time, Australia's cultural vitality is also a product of other languages spoken in the community. Over 200 languages are spoken, including 48 Australian Indigenous languages. In 1996, 2.5 million people (16% of the population five years and over) spoke a language other than English in the home.

About 44,000 people spoke an Australian Indigenous language or an Australian creole (a language developed from pidgin English) in the home (table 5.47). Speakers of these languages made up 14% of Indigenous people

and 0.3% of the Australian population. They were mostly located in relatively sparsely populated regions in the centre and north of Australia. 64% of Indigenous people in the Northern Territory spoke an Indigenous language or creole at home. The two languages with the most speakers were Arrernte, a central Australian language (3,468 speakers), and Dhuwal~Dhuwala, an Arnhem land language (3,219 speakers).

The leading five community languages, each with more than 100,000 speakers, were Italian, Greek, Cantonese, Arabic/Lebanese and Vietnamese. A further ten languages were spoken by more than 40,000 people. These 15 languages, together with Indigenous languages and creoles, accounted for 73% of all people speaking a language other than English in the home.

Greek, Italian and Arabic had the largest proportions of Australian-born speakers, partly reflecting a greater rate of maintenance of these languages among the second generation of these language groups. Languages mostly brought to Australia more recently, such as Mandarin, have a smaller proportion of Australian-born speakers.

**5.47 PERSONS(a) WHO SPOKE A LANGUAGE OTHER THAN ENGLISH AT HOME—1996**

	Males	Females	Persons	Proportion Australian-born	Persons as a proportion of population
Language spoken at home	'000	'000	'000	%	%
Italian	183.6	183.7	367.3	40.7	2.3
Greek	130.3	128.7	259.0	46.7	1.6
Cantonese	91.6	98.5	190.1	12.9	1.2
Arabic/Lebanese	83.7	78.3	162.0	37.8	1.0
Vietnamese	67.3	66.7	134.0	12.6	0.8
German	46.3	50.3	96.7	18.9	0.6
Mandarin	42.7	44.6	87.3	6.4	0.5
Spanish	42.2	44.6	86.9	17.6	0.5
Macedonian	34.8	33.3	68.1	34.9	0.4
Tagalog (Filipino)	26.0	41.3	67.3	5.0	0.4
Croatian	33.7	33.0	66.7	32.4	0.4
Polish	28.3	32.7	61.0	16.2	0.4
Maltese	22.4	22.3	44.7	27.9	0.3
Indigenous languages and creoles	21.8	22.4	44.2	98.9	0.3
Turkish	21.7	20.6	42.2	31.3	0.3
Netherlandic (Dutch/Flemish)	18.3	21.9	40.2	12.4	0.3
All other(b)	323.5	333.4	656.9	15.2	4.1
<b>Total</b>	<b>1 218.3</b>	<b>1 256.3</b>	<b>2 474.6</b>	<b>26.0</b>	<b>15.5</b>

(a) Excludes children aged under 5 years. (b) Excludes inadequately described languages.

Source: 1996 Census of Population and Housing.

Within the group who spoke a language other than English at home, proficiency in English varied according to age and whether or not they were Australian-born. Over 92% of 5 to 24 year olds spoke English well or very well, compared with 59% of those aged 65 years and over (see table 5.48). The influence of birthplace was

evident in the consistently higher level of proficiency in English among those born in Australia, of whom 96% spoke English well or very well, compared with 82% overall. However, proficiency in speaking English well has increased slightly in all age groups since the 1991 Census.

**5.48 PROFICIENCY IN ENGLISH, Persons Who Spoke a Language Other than English at Home—1996**

Proficiency in English	Unit	Age group (years)				Total
		5–24	25–44	45–64	65 and over	
Total population speaking other than English at home						
Speaks English well/very well	%	92.2	84.6	74.9	59.3	<b>81.5</b>
Does not speak English well	%	6.9	13.8	21.6	28.7	<b>15.4</b>
Does not speak English at all	%	0.9	1.6	3.5	11.9	<b>3.1</b>
Total	%	100.0	100.0	100.0	100.0	<b>100.0</b>
Total(a)	no.	720 744	865 365	600 818	287 662	<b>2 474 589</b>
Australian-born population speaking other than English at home						
Speaks English well/very well	%	95.5	97.2	90.1	79.3	<b>95.6</b>
Does not speak English well	%	4.0	2.4	8.1	15.2	<b>3.8</b>
Does not speak English at all	%	0.5	0.4	1.8	5.4	<b>0.6</b>
Total	%	100.0	100.0	100.0	100.0	<b>100.0</b>
Total(b)	no.	386 155	213 885	30 553	8 240	<b>638 833</b>

(a) Includes 37,000 people who did not state how well they speak English. (b) Includes 14,000 people who did not state how well they spoke English.

Source: 1996 Census of Population and Housing.

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# Aboriginal and Torres Strait Islander Australians: A statistical profile from the 1996 Census

## Introduction

The five-yearly Census of Population and Housing remains the most important source of information about Australia's Aboriginal and Torres Strait Islander people. Aboriginal and Torres Strait Islander Australians have been fully included in results for every census since 1971, providing a rich historical record of changes to this population group. A history of census counts of Indigenous Australians can be found in *Year Book Australia 1998* (pp. 156–58).

The three major areas of census data used in this article are population figures, person and household characteristics. Comparisons with the total Australian population are made in order to give some understanding of the distinctive characteristics of the Indigenous population. Indigenous statistics from New Zealand and Canada, where available and consistent with the Australian data, are used to provide an international context for statistical indicators about Australia's Indigenous people.

## Population

Information from the Census provides an overview of a wide range of socio-economic indicators for Indigenous Australians. Most importantly, however, the Census is the basis for

official population figures. While each census aims to count every person in Australia once, some people are inevitably missed and some counted twice. More people are missed than counted twice. In addition, some people do not answer the Indigenous status question; a proportion of these non-respondents will be Indigenous. To arrive at the best possible estimate of the size of the Aboriginal and Torres Strait Islander population, the census count is adjusted to take account of these two factors. The resulting figure is called the 'estimated resident population' (ERP). ERP for dates other than census day must also take account of births, deaths and migration in the intervening period.

## Estimated resident population

The estimated resident Aboriginal and Torres Strait Islander population as at 30 June 1996 was 386,000 (table S1.1). The average annual growth rate of 2.3% for the Indigenous population of Australia for the period 1991 to 1996 was nearly twice the rate for the total population (1.2%) (ABS 1998b).

Over half of the Indigenous population resided in New South Wales (28.5%) and Queensland (27.2%) and just over a quarter in Western Australia and the Northern Territory.

**S1.1 ESTIMATED RESIDENT POPULATION, By State/Territory—30 JUNE 1996(a)**

State/Territory	Indigenous population(b) '000	Total population '000	Proportion of total State or Territory population %	Proportion of Indigenous population %
NSW	109.9	6 204.7	1.8	28.5
Vic.	22.6	4 560.2	0.5	5.9
Qld	104.8	3 338.7	3.1	27.2
SA	22.1	1 474.3	1.5	5.7
WA	56.2	1 765.3	3.2	14.6
Tas.	15.3	474.4	3.2	4.0
NT	51.9	181.8	28.5	13.4
ACT	3.1	308.3	1.0	0.8
<b>Aust.(c)</b>	<b>386.0</b>	<b>18 310.7</b>	<b>2.1</b>	<b>100.0</b>

(a) Figures have been rounded to the nearest 100. As a result, discrepancies may occur between sums of component items and totals. (b) Experimental estimates. (c) Includes Jervis Bay Territory, Christmas Island and Cocos (Keeling) Islands.

Source: 1997a, 1998b.



**S1.2 ESTIMATED RESIDENT POPULATION—1996**

	Aboriginal and Torres Strait Islander people(a)	Australia	New Zealand	
		Total population	Maori(b)	Total population
Population ('000)	386.0	18 310.7	548.0	3 714.0
Median age (years)	20	34	22	33
0–14 years (%)	40.0	21.4	36.9	22.8
65 years and over (%)	2.6	12.0	2.9	11.6

(a) Experimental estimates. (b) New Zealand Maori ethnic group.

Source: ABS 1997a, 1998b; SNZ 1997a, 1998(a).

Aboriginal and Torres Strait Islander people comprised 28.5% of the population of the Northern Territory, the highest proportion of any State or Territory.

**A young population**

As table S1.2 shows, the Aboriginal and Torres Strait Islander population, with a median age of 20 years, is younger than the total population by 14 years (ABS 1998b). This is similar to New Zealand, where the median age of the New Zealand Maori population is 22 years compared to 33 years for the total New Zealand population (SNZ 1997a, 1998a). Current life expectancy for Aboriginal and Torres Strait Islander people was 57 years for males and 62 years for females, nearly 20 years less than for the total population (ABS 1998b).

The indigenous populations of Australia and New Zealand have markedly different age structures compared to the total populations in both countries. Children aged under 15 years account for much larger proportions of indigenous populations than of the total population. Conversely, there are very low proportions of older people aged 65 years and over in these indigenous populations.

Although the New Zealand Maori and Australia's Aboriginal and Torres Strait Islander population have similar age structures, the age structure of the Maori population is closer to that of the total New Zealand population than Australia's Aboriginal and Torres Strait Islander population is to that of the total Australian population, with smaller differences in the proportion of children and the median age.

**A minority population**

Data from the 1996 censuses conducted in Australia, New Zealand and Canada show that the indigenous populations in these countries are minority populations. Of the three countries, the highest proportion of indigenous people in the general population was in New Zealand where the Maori population represented 14.5% of the total New Zealand population in 1996 (table S1.3). The indigenous populations of Canada and Australia accounted for far smaller proportions of the total population than in New Zealand. Canada's Aboriginal peoples were 2.8% of the total population, whereas in Australia, Aboriginal and Torres Strait Islander people were only 2.0% of the total.

**S1.3 CENSUS COUNTS—1991–96**

	1991			1996		
	Total population	Indigenous population		Total population	Indigenous population	
	'000	'000	%(a)	'000	'000	%(a)
Australia	16 771.7	265.4	1.6	17 752.8	353.0	2.0
New Zealand(b)	3 373.9	434.8	12.9	3 618.3	523.4	14.5
Canada(c)	26 994.0	625.7	2.3	28 528.1	799.0	2.8

(a) Indigenous population expressed as a percentage of the total population. (b) New Zealand Maori ethnic group. (c) Population identifying as Aboriginal. The 1991 Canadian Census asked for each person's ancestry. 1,002,675 people reported Aboriginal ancestry. The 1991 Aboriginal Peoples Survey (APS), conducted as a follow up to the 1991 Census, showed that 625,710 people with Aboriginal ancestry also identified as Aboriginal. The 1996 Census used two questions, one about ancestry and the other about identity. Both these questions were different from those used in the 1991 Census or APS. 1,101,960 people reported Aboriginal ancestry in 1996 compared to 799,010 who reported Aboriginal identity. In addition, some Indian reserves and settlements were incompletely enumerated in both the 1991 Census and APS and the 1996 Census. The effect of the missing data is small for national data.

Source: ABS 1997b, SNZ 1997b, 1997c, Statistics Canada 1993, 1998.

However, the census counts of indigenous populations in these countries increased more rapidly than those for the total population in the 1991–96 period. In all three countries, the count of the total population increased by 6–7% over the five year period, whereas the counts of indigenous populations increased by 20–33%. As a result of these higher rates of increase, the proportions of the total population who are indigenous have increased in all three countries between 1991 and 1996.

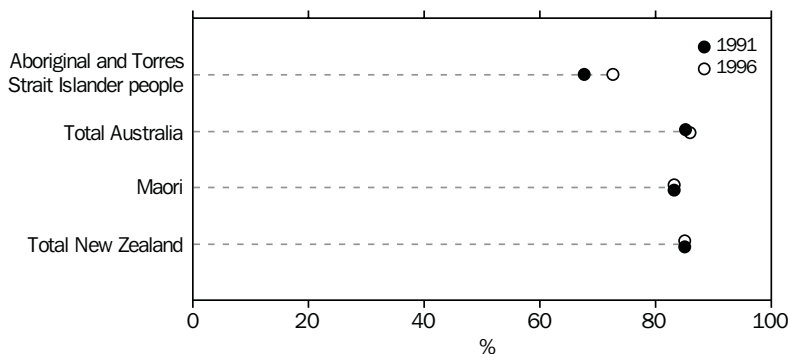
### An urban population

The Australian Indigenous population is becoming increasingly urbanised. 'Urban' is defined as a population centre of 1,000 or more people. At the 1991 Census, 67.6% of Indigenous people lived in urban areas; by the time of the 1996 Census this had increased to 72.6% (graph S1.4). In comparison, 85.1% of the total population lived in urban areas in 1991, increasing marginally to 85.9% in 1996 (ABS 1998c). By contrast, New Zealand Maori are more urbanised than Australia's Indigenous people, with 83.1% living in urban areas in both 1991 and 1996; this is very close to the proportion of the total New Zealand population residing in urban areas in both years (85.0%) (SNZ 1997b, 1997d).

The urbanisation of Indigenous Australians does not reflect a mass movement to cities and towns by Indigenous people. Since the urban and rural classification is population-based, some of the increase is a result of changes in classification of some smaller urban centres. Some of the increase is also a function of changes in the willingness of Indigenous Australians to identify themselves as such on the Census form. This effect is more common in urban areas than in rural areas.

There are differences in the types of urban centres in which Indigenous and other Australians reside. In 1996, Aboriginal and Torres Strait Islander Australians were less likely than the general population to be living in major urban areas of 100,000 or more people (30.3% of Indigenous people compared to 62.7% of the total population). On the other hand, 42.3% of Indigenous people lived in smaller centres of between 1,000 and 99,999 people; in contrast, only 23.2% of the total population lived in smaller urban centres (ABS 1998c).

**S1.4 URBAN POPULATION(a)—1991–96**



(a) Proportion of total applicable population.

Source: ABS 1998c, SNZ 1997b, 1997d.

## Person characteristics

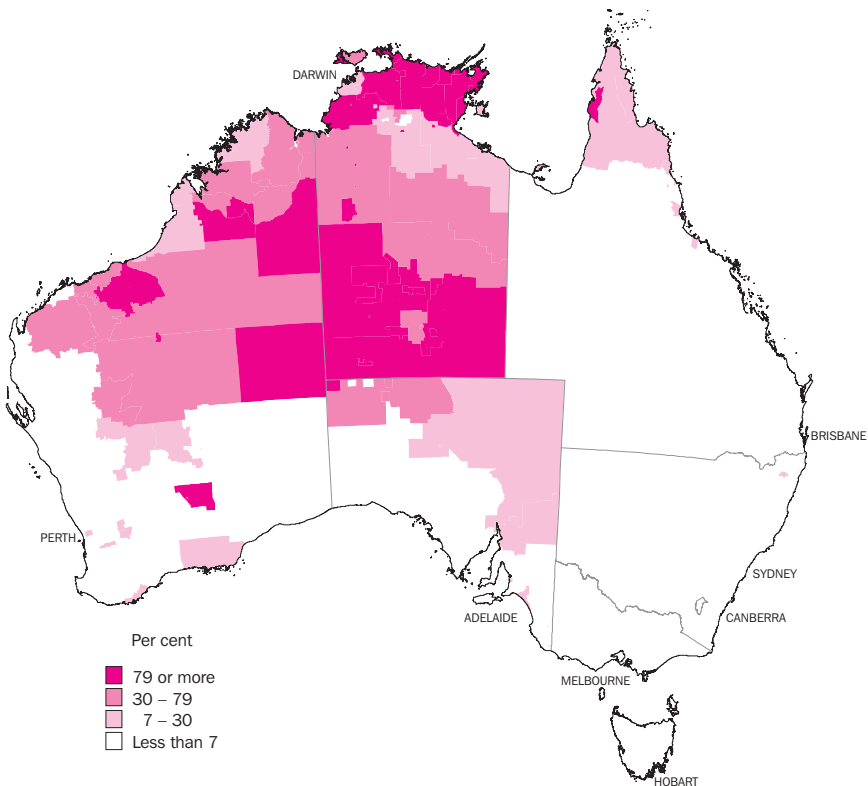
### Language

The Australian Census asks each person which language he or she speaks at home. In 1996, 13.3% of Australian Indigenous people reported speaking an Indigenous language at home (ABS 1998c). In contrast, the New Zealand Census asks in which languages a person can carry on a conversation about everyday things. Of New Zealand Maori, 24.7% reported being able to carry on a conversation in the Maori language (SNZ 1997b). The Canadian Census, on the other hand, asks both language spoken at home and ability to carry on a conversation. A similar proportion of Aboriginal Canadians spoke an Aboriginal language at home as Indigenous

Australians (15.0% and 13.3% respectively); at the same time a similar proportion of Aboriginal Canadians could carry on a conversation in an Aboriginal language as New Zealand Maori (29.3% and 24.7% respectively) (Statistics Canada 1998).

In all three countries, indigenous language use was highest among older indigenous people and those living outside urban areas (ABS 1998c, SNZ 1997b, Statistics Canada 1998). In Australia, most Indigenous language speakers were concentrated in the north and west (map S1.5). Some areas where there were high numbers of not stated responses showed very low proportions of Indigenous language speakers.

**S1.5 INDIGENOUS LANGUAGE SPEAKERS, Proportion of Indigenous Population**



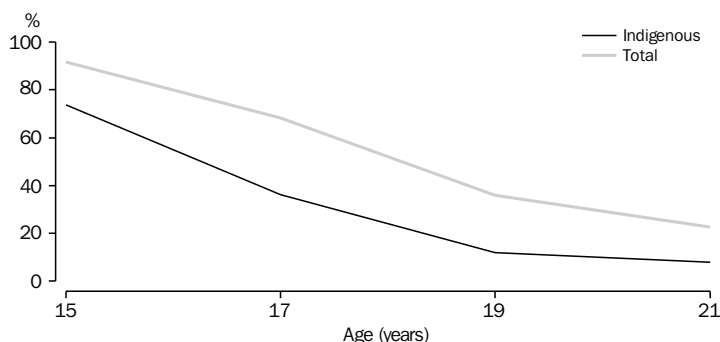
Source: 1996 Census of Population and Housing.

## Education

Indigenous Australians were less likely to be attending an educational institution full-time than other Australians. In 1996, 73.7% of Indigenous 15 year olds were in full-time education compared to 91.5% of all 15 year olds (graph S1.6). At older ages the disparity between Indigenous and total persons increased, so that at age 19, when tertiary education could be expected to occur, only 12.0% of Indigenous persons were in full-time education, one-third the rate for total persons.

The proportions of Aboriginal and Torres Strait Islander people and New Zealand Maori with a post-school qualification were very similar in 1996 at 13.6% and 14.3% respectively (graph S1.7). In contrast, 34.4% of the total population of Australia and 32.2% of the total New Zealand population had a post-school qualification (ABS 1998c, SNZ 1997b, 1997c). Indigenous people in major urban centres of 100,000 people or more were more likely to have a qualification than those in other areas (ABS 1998c).

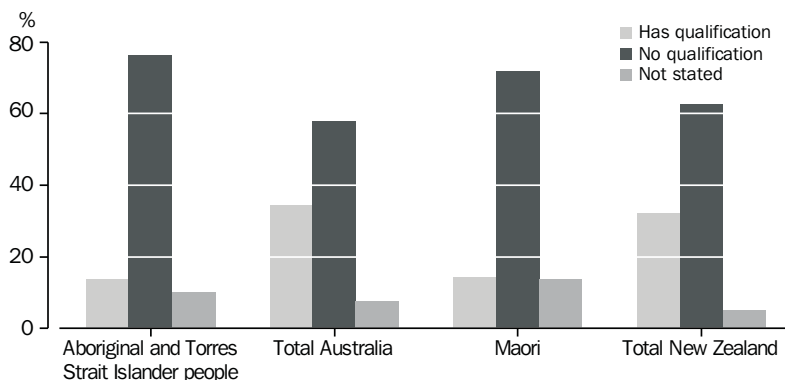
**S1.6 PARTICIPATION IN FULL-TIME EDUCATION(a)—1996**



(a) Persons attending an educational institution full-time as a percentage of all persons of the appropriate age.

Source: Unpublished data, 1996 Census of Population and Housing.

**S1.7 WHETHER HAS QUALIFICATION, Persons aged 15 years and over—1996**



Source: ABS 1998c, SNZ 1997b, 1997c.

## Labour force

At the time of the 1996 Census, 52.7% of Australia's Indigenous population aged 15 years and over were in the labour force, in comparison to 61.9% of the total population of the same age group (table S1.8). Of the Indigenous labour force participants, 22.7% were unemployed, more than double the unemployment rate for the total population (9.2%). Thus, proportionally fewer Indigenous Australians were active in the labour force (that is working or looking for work) and, of those in the labour force, proportionally fewer had a job. By contrast, there was virtually no difference in the proportions of both New Zealand Maori (65.3%) and the total New Zealand population (65.4%) in the labour force. The unemployment rate for Maori (17.5%), while lower than that for Indigenous Australians, was still more than double the rate for the total New Zealand population.

Overall, 56.6% of employed Indigenous people were employed full-time, lower than the rate for the total population of 67.8%. In contrast, there was virtually no difference in the proportion of Maori (75.9%) and the total New Zealand population (76.8%) who were employed full-time.

Having a post-school qualification lowered the unemployment rate for all groups. The unemployment rate for Indigenous Australians with a post-school qualification was 14.1%, in comparison to 5.9% for the equivalent group in the total population (graph S1.9). For Maori with a post-school qualification, the unemployment rate, at 8.8%, was half that for all Maori.

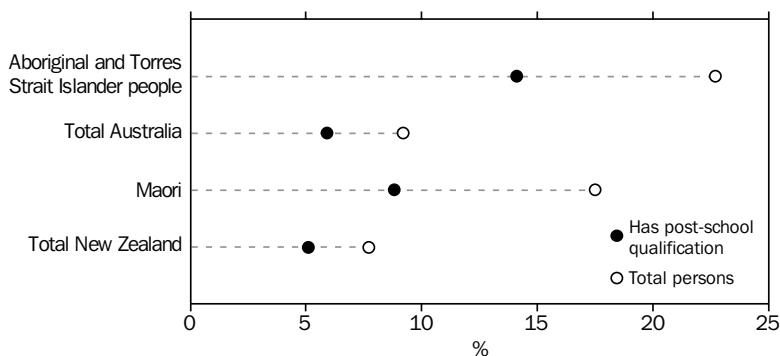
**S1.8 LABOUR FORCE STATUS—1996(a)**

	Aboriginal and Torres Strait Islander people	Australia		New Zealand	
		Total population		Maori	Total population
	%	%		%	%
Employment/population ratio(b)	40.7	56.2		53.9	60.4
Unemployment rate(c)	22.7	9.2		17.5	7.7
Participation rate(d)	52.7	61.9		65.3	65.4
Full-time employment(e)	56.6	67.8		75.9	76.8

(a) Persons aged 15 years and over. Excludes labour force not stated. (b) Employed persons expressed as a percentage of the population aged 15 years and over. (c) Unemployed persons expressed as a percentage of the labour force (employed plus unemployed). (d) Labour force (employed plus unemployed) expressed as a percentage of the population aged 15 years and over. (e) Persons in full-time employment expressed as a percentage of the total employed.

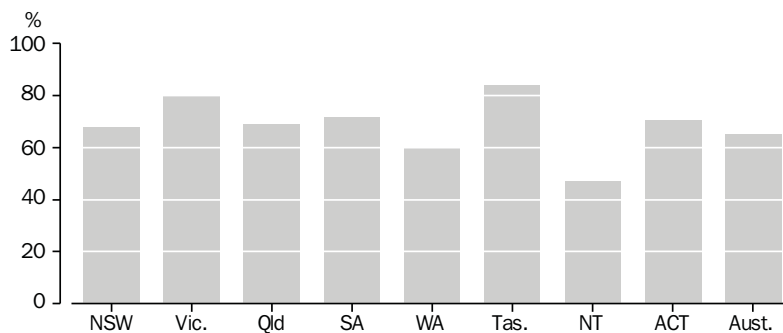
Source: ABS 1998c; SNZ 1997b, 1998b.

**S1.9 UNEMPLOYMENT RATE—1996**



Source: Unpublished data, SNZ 1997b, 1998b.

**S1.10 INDIGENOUS MEDIAN PERSONAL INCOME(a),  
Expressed as a percentage of total—1996**



(a) Persons aged 15 years and over.

Source: ABS 1998d.

## Income

The median personal income of Indigenous Australians was \$190 per week in 1996. This was 65.1% of the median income of all Australians (\$292) (ABS 1998d) (graph S1.10). In contrast, New Zealand Maori had a median personal income which was 82.4% of that for all New Zealanders in 1996 (SNZ 1997b, 1997c).

Indigenous people in Tasmania and Victoria came closest to income parity with all Australians, receiving 84.0% and 80.0%, respectively, of the median income of total persons in each State. At the other extreme, Indigenous people in the Northern Territory had a median income only 47.2% of that for the total population in that Territory.

## Households and housing

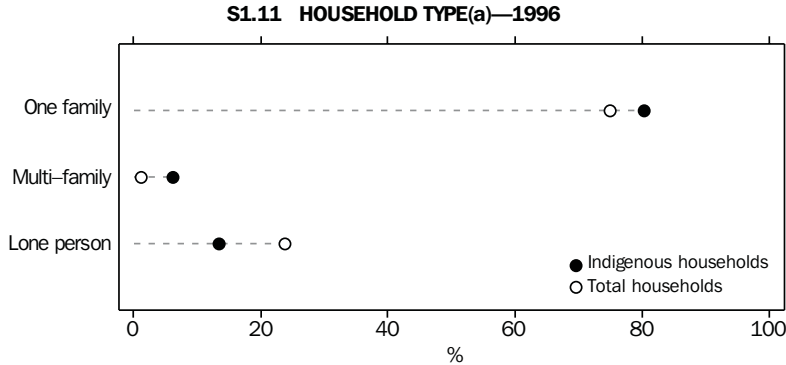
A household is defined in the census as a group of people who usually reside and eat together. Households are further classified into family and non-family households, the latter defined as either groups of unrelated individuals or people living alone. An Indigenous household is defined as a family household where the reference person or spouse is Indigenous or a lone person household where the lone person is Indigenous. The concept of Indigenous household does not apply to group households. There were 94,931 Indigenous family and lone person households in 1996. Of these, 55.9% comprised only Indigenous people, with the remainder a mix of Indigenous and non-Indigenous people (ABS 1998c).

## Type of household

A greater proportion of Indigenous households (86.6%) than of total households (76.2%) were family households (graph S1.11). Indigenous households were also more likely to be multi-family households than were total households. In 1996, 6.2% of Indigenous family households contained two or more families, while the corresponding figure for all households was only 1.2%. Nearly half (45.0%) of all three-family households were Indigenous households.

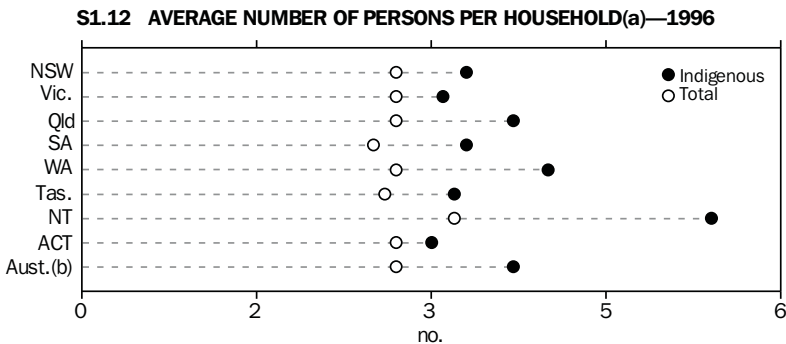
Irrespective of the number of families in a household, Indigenous households had more residents on average than other households. Overall, there were 3.7 persons per Indigenous household, one person more than in all households (graph S1.12). On average, Indigenous households in the Northern Territory had the most persons per household at 5.4. Indigenous households in the ACT and Victoria were closest in size to total households with 3.0 and 3.1 persons per household on average.

The additional residents in Indigenous households are partly explained by the number of children resident in family households. Of those Indigenous family households with children aged under 15, 15.2% had four or more children while only 5.1% of total family households had the same number of children (ABS 1998c).



(a) Family and Lone person households only. Excludes Group, Visitors only and Other not classifiable households. Proportion of total applicable households.

Source: ABS 1998c.



(a) Includes up to three temporarily absent persons. Excludes visitors to the household. Excludes Group, Visitors only and Other not classifiable households. Includes both Indigenous and other persons. (b) Includes Jervis Bay Territory, Christmas Island and Cocos (Keeling) Islands.

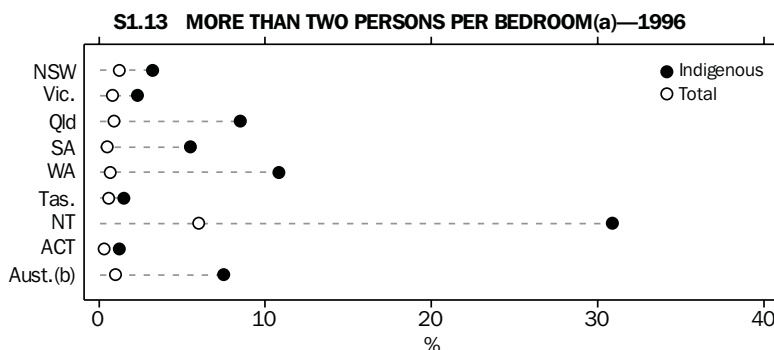
Source: ABS 1998d.

## People per bedroom

Given the larger size of Indigenous households, it is probable that housing stress would affect more Indigenous households than other households. Of Indigenous households, where the number of bedrooms was stated, 7.5% had more than two persons to each bedroom compared to 1.0% of total family and lone person households (graph S1.13).

Although proportionally more Indigenous than other households had more than two persons per bedroom in every State and Territory, the extent of this varied widely across States and

Territories. More than two people per bedroom were most common in the Northern Territory for both Indigenous and total households, accounting for 30.9% of Indigenous households and 6.0% of total households. Western Australia (10.8%) and Queensland (8.5%) had the next highest proportions among Indigenous households.



(a) As a percentage of applicable family and lone person households where the number of bedrooms was stated. Includes up to three temporarily absent persons. Excludes visitors to the household. (b) Includes Jervis Bay Territory, Christmas Island and Cocos (Keeling) Islands.

Source: ABS 1998c.

## Tenure

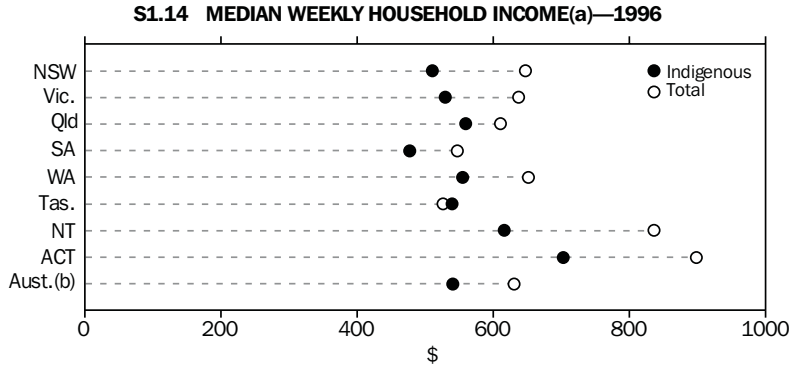
The rate of home ownership among Indigenous households was much lower than for all family and lone person households. The homes of only 30.8% of Indigenous households were either fully owned or being purchased; the corresponding figure for all households was 70.0% (ABS 1998c).

Of the 63.8% of Indigenous households who were renting their homes, nearly identical proportions were renting from private landlords and real estate agents (36.9%) and Government agencies (36.5%). In contrast, 65.5% of total renting households were renting from private landlords and real estate agents. Community and cooperative housing organisations were landlords for 15.7% of renting Indigenous households; by comparison only 1.9% of all renting households were renting from this type of landlord. Community and cooperative housing organisations were landlords to renting Indigenous households most often in rural areas (ABS 1998c).

## Household income

Although there was, on average, one more person in Indigenous households (3.7) than in all households (2.7), median household income was \$540 per week, \$90 less than in all households (graph S1.14). Median household income varied across States and Territories. Although Indigenous households in the Northern Territory contained 5.4 people on average, two more than total households, median income for Indigenous households was over \$200 less than for total households. While median household income is relatively higher for Indigenous households in the Northern Territory than elsewhere, this is accounted for by the fact that Indigenous households in the NT were the largest of any State or Territory. The size of Indigenous households was smallest in the ACT, but median household income was highest.





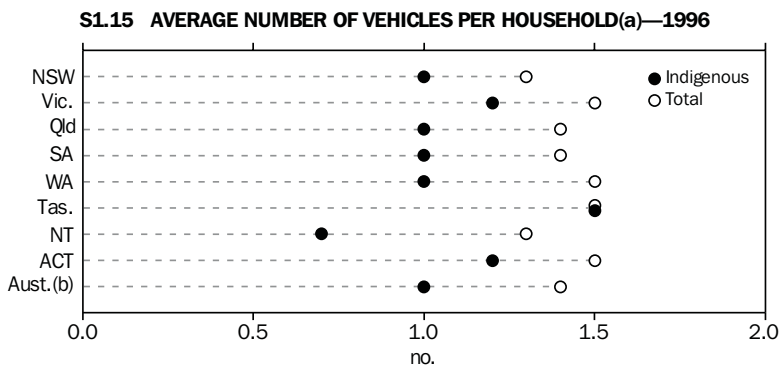
(a) Family and lone person households. Excludes Group, Visitors only and Other not classifiable households. (b) Includes Jervis Bay Territory, Christmas Island and Cocos (Keeling) Islands.

Source: ABS 1998c.

## Number of vehicles

Access to services such as schools, hospitals, legal services and government agencies is a complex issue involving distance to service centres, the availability of private and public transport, infrastructure such as roads and highways, and the cost of vehicles and fuel. For cultural minorities, there are additional complex cultural barriers which can impair access. The only variable related to access to services obtainable from the census is a measure of the availability of private transport. The census asks

each household for the number of vehicles garaged at a dwelling on census night. There was one vehicle on average for each Indigenous household, 0.4 less than for all households (graph S1.15). For total households, the number of vehicles ranged between 1.3 to 1.5 for all States and Territories. However, only in Tasmania did the average number of vehicles for Indigenous households equal that for all households. Indigenous households in the Northern Territory averaged the fewest number (0.7) of vehicles per household.



(a) Family and lone person households. Excludes Group, Visitor only and Other not classifiable households. (b) Includes Jervis Bay Territory, Christmas Island and Cocos (Keeling) Islands.

Source: Unpublished data, 1996 Census of Population and Housing.

## Further information

More information about the census characteristics of Indigenous Australians is available in *1996 Census of Population and Housing: Indigenous Profile* (2020.0), a set of 26 tables for various geographic areas ranging from individual communities to ATSI Regions, and *1996 Census of Population and Housing: Aboriginal and Torres Strait Islander People* (2034.0–8), a set of publications for each State and Territory and Australia.

Other data relating to population issues can be found in *Experimental Estimates of the Aboriginal and Torres Strait Islander Population 30 June 1991–30 June 1996* (3230.0) and *Experimental Projections of the Aboriginal and Torres Strait Islander Population 30 June 1996–30 June 2006* (3231.0).

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## Introduction

The information relating to labour presented in this chapter covers a wide range of aspects. Labour statistics are important economic indicators—changes in measures of employment, unemployment, earnings and other labour costs, overtime, job vacancies and industrial disputes provide insights into the performance of the economy and the effects of economic policy settings. Labour statistics are also very much about people—their entry to the labour force, their participation in it, whether they are employed or not, how much they earn, what other benefits they receive, how many hours they work, their mobility between jobs, the training they receive, and their retirement from employment.

This chapter looks first at the size and composition of the labour force, including age, sex, labour force status and birthplace.

It goes on to cover employed persons' demographic characteristics, occupation, industry, whether they are in the private or public sector, their hours worked and other characteristics of their working lives. Next come statistics on unemployment and unemployment rates, demographic characteristics of the unemployed, their job search experience and job vacancies. This is followed by characteristics of people who were retrenched or made redundant and their subsequent labour market experience.

The section on persons not in the labour force provides information about those persons who are marginally attached to the labour force, and therefore are potential participants in it. These include discouraged jobseekers.

Next, the chapter looks at retirement trends over time and the income arrangements retirees made, and potential retirees have made, to provide for their retirement.

The section dealing with employee earnings presents increases in labour costs, the wage cost index, average weekly earnings and the composition and distribution of earnings.

As well as wages and salaries, employees receive and employers pay for a range of additional benefits. Leave entitlements are widespread. Superannuation is an area that has seen marked change in recent years. Other employee benefits are set out in detail.

The chapter examines hours worked, including overtime. Statistics are presented about the extent, cause, duration and method of settlement of industrial disputes, followed by details of trade union membership.

This is followed by statistics on training provided by employers. The chapter concludes with information on the major reforms to the Commonwealth Government's labour market assistance implemented in 1997–98.

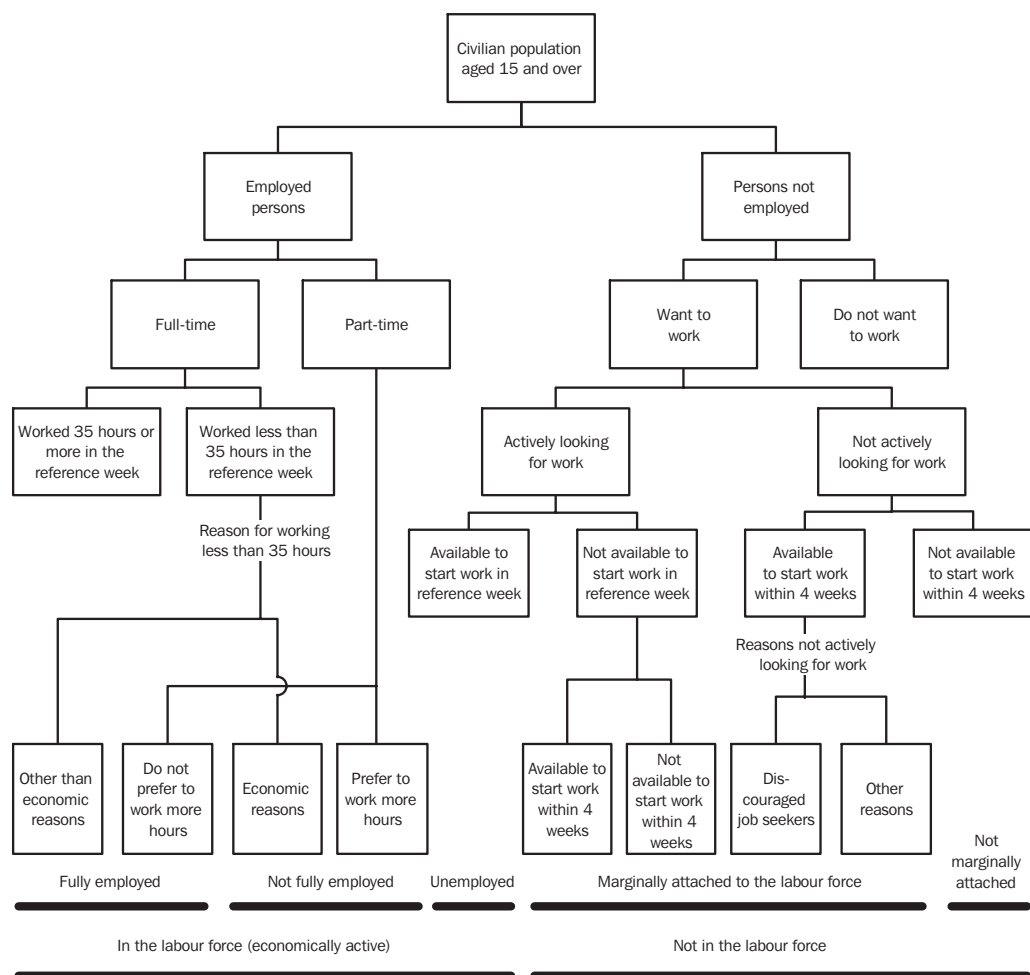
## The labour force

Fundamental to the measurement of employment and unemployment is the concept of the labour force. This is defined as those persons aged 15 and over who, during a particular week, are either employed or unemployed. The labour force represents the official measure of the total supply of labour available to the labour market during a given week.

The conceptual framework for the Australian labour force is set out schematically in diagram 6.1.

This section presents summary statistics on the civilian labour force drawn from the ABS monthly Labour Force Survey and associated supplementary surveys. The survey provides timely estimates of the labour force status of the Australian population. The survey data present a range of characteristics such as whether persons are employed, unemployed or not in the labour force, together with demographic information (age, sex, marital status, etc.). Further details concerning the scope, coverage and survey methods of the labour force and supplementary surveys (as well as more detailed statistics) can be found in the publications listed in the bibliography.

## 6.1 THE AUSTRALIAN LABOUR FORCE FRAMEWORK

**Characteristics of the labour force**

The size and composition of the labour force are not static over time. Changes in the size of the labour force are caused by changes in labour force participation as well as changes in the population aged 15 and over.

The contribution to labour force growth from population increase was positive for all years from 1991–92 to 1997–98. The contribution due to labour force participation was more variable. Following three years of a positive contribution to labour force growth between 1993–94 and 1995–96, a negative impact of 0.3 percentage points on labour force growth was recorded in 1996–97 and 1997–98 (table 6.2).

**6.2 LABOUR FORCE, Components of Change, Annual Average**

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
	%	%	%	%	%	%
<b>MALES</b>						
Percentage change in labour force	0.5	0.9	1.5	1.6	1.0	0.9
Percentage points change due to						
Population growth	1.2	1.2	1.3	1.5	1.6	1.4
Labour force participation	-0.7	-0.3	0.2	0.1	-0.6	-0.4
<b>FEMALES</b>						
Percentage change in labour force	0.9	2.2	3.2	2.6	1.8	1.0
Percentage points change due to						
Population growth	1.2	1.2	1.3	1.4	1.6	1.4
Labour force participation	-0.4	1.0	1.9	1.1	0.1	-0.2
<b>PERSONS</b>						
Percentage change in labour force	0.7	1.4	2.2	2.0	1.3	0.9
Percentage points change due to						
Population growth	1.2	1.2	1.3	1.5	1.6	1.4
Labour force participation	-0.5	0.2	0.9	0.5	-0.3	-0.3

Source: Unpublished data, Labour Force Survey.

The participation rate is one of the most important indicators relating to the labour force. It represents the proportion of the population aged 15 and over who are in the labour force. Analysis of participation rates, particularly in terms of age, sex and marital status, provides the basis for monitoring changes in the size and

composition of labour supply. The annual average participation rate for males has generally been declining, and in 1997–98 it was 73.0%. In contrast, the female participation rate increased from 51.9% in 1991–92 to 53.9% in 1996–97, but fell marginally in 1997–98 to 53.7% (graph 6.3).

**6.3 PARTICIPATION RATES, Annual Average**

Source: Labour Force, Australia (6203.0).

Table 6.4 shows changes in labour force status, between 1992–93 and 1997–98, for both males and females. Notable features include a steady increase in employment for both males and females. The male unemployment rate fell rapidly between 1992–93 and 1994–95 but has

been relatively steady (with a small fall in 1997–98). From a peak in 1992–93, the female unemployment rate fell until 1995–96, before rising in 1996–97. In 1997–98, the female unemployment rate fell slightly.

#### 6.4 CIVILIAN POPULATION AGED 15 AND OVER, Labour Force Status, Annual Average

	Unit	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
MALES							
Employed	'000	4 396.9	4 472.3	4 630.1	4 721.5	4 765.2	4 824.6
Unemployed							
Looking for full-time work	'000	531.3	500.0	415.1	401.9	403.8	389.0
Looking for part-time work	'000	50.2	49.0	51.1	53.4	58.5	59.2
Total unemployed	'000	581.5	549.0	466.2	455.3	462.3	448.3
Labour force	'000	4 978.4	5 021.3	5 096.3	5 176.8	5 227.5	5 272.9
Not in the labour force	'000	1 760.0	1 797.0	1 810.4	1 832.2	1 891.5	1 948.1
Civilian population	'000	6 738.3	6 818.3	6 906.7	7 009.0	7 119.0	7 221.0
Unemployment rate	%	11.7	10.9	9.2	8.8	8.8	8.5
Participation rate	%	73.9	73.6	73.8	73.9	73.4	73.0
FEMALES							
Employed	'000	3 237.0	3 308.3	3 463.0	3 578.2	3 623.9	3 676.8
Unemployed							
Looking for full-time work	'000	259.8	262.3	225.0	211.4	225.1	216.4
Looking for part-time work	'000	99.3	104.2	103.4	100.0	109.2	103.4
Total unemployed	'000	359.0	366.4	328.4	311.4	334.3	319.8
Labour force	'000	3 596.0	3 674.7	3 791.4	3 889.6	3 958.1	3 996.7
Not in the labour force	'000	3 356.7	3 360.5	3 333.1	3 337.7	3 387.6	3 452.0
Civilian population	'000	6 952.7	7 035.3	7 124.5	7 227.3	7 345.7	7 448.7
Unemployment rate	%	10.0	10.0	8.7	8.0	8.4	8.0
Participation rate	%	51.7	52.2	53.2	53.8	53.9	53.7

Source: Unpublished data, Labour Force Survey.



In 1997–98, the labour force participation rate for persons born overseas was 58.4%, compared with a participation rate of 66.6% for persons born in Australia. The participation rate for persons born overseas in other than main English-speaking countries was 54.1%. Of all overseas-born persons, those born in Oceania (which includes New Zealand) and Northern America had higher participation rates than for persons born in Australia (table 6.5).

Table 6.6 provides an overview of labour force status of persons according to the family relationship within households. Notable features

include: couple families with dependants present, 83.7% of husbands were employed full time, compared with 26.0% of wives (with a further 34.4% of wives employed part time). For lone parents with dependants, 46.5% of male lone parents were employed full time compared with 17% of female lone parents. The unemployment rate for lone parents was higher than for husbands or wives.

Statistics on labour force status according to level of educational attainment are contained in *Chapter 10, Education*.

#### 6.5 CIVILIAN LABOUR FORCE, By Birthplace, Annual Average—1997–98

	Employed		Unemployed		Total labour force	Unemployment rate	Participation rate
	Full-time workers	Total	Looking for full-time work	Total			
	'000	'000	'000	'000	'000	%	%
Born in Australia	4 724.8	6 434.4	440.3	562.7	6 997.1	8.0	66.6
Born outside Australia							
Main English-speaking countries	693.7	910.6	54.4	66.6	977.2	6.8	65.1
Other countries	912.2	1 156.5	110.8	138.8	1 295.3	10.7	54.1
Oceania	192.4	248.9	22.1	27.0	275.8	9.8	74.6
Europe and the former USSR	863.8	1 121.7	76.1	91.3	1 213.0	7.5	54.5
The Middle East and North Africa	67.9	84.6	14.3	16.9	101.5	16.6	50.3
South-East Asia	193.1	241.6	27.7	36.0	277.6	13.0	60.6
North-East Asia	89.3	115.0	7.5	10.4	125.4	8.3	53.6
Northern America	38.8	48.5	2.3	3.0	51.5	5.8	72.4
Other	160.6	206.7	15.1	20.8	227.5	9.1	68.4
Total born outside Australia	1 606.0	2 067.1	165.1	205.4	2 272.5	9.0	58.4
<b>Total</b>	<b>6 330.8</b>	<b>8 501.4</b>	<b>605.5</b>	<b>768.1</b>	<b>9 269.6</b>	<b>8.3</b>	<b>63.2</b>

Source: Unpublished data, Labour Force Survey.

## 6.6 LABOUR FORCE STATUS, Relationship in Household(a)—June 1998

	Employed		Unemployed		Labour force	Not in labour force	Civilian population aged 15 and over	Unemployment rate	Participation rate
	Full-time	Total	Looking for full-time work	Total					
	'000	'000	'000	'000	'000	'000	'000	%	%
MALES									
Family member	3 465.5	3 947.6	278.7	318.8	4 266.5	1 459.6	5 726.1	7.5	74.5
Husband									
With dependants	1 712.7	1 807.0	99.4	104.2	1 911.2	134.6	2 045.8	5.5	93.4
Without dependants	1 103.0	1 235.2	52.4	56.7	1 291.9	874.7	2 166.7	4.4	59.6
<i>Total husband</i>	2 815.8	3 042.2	151.8	160.9	3 203.2	1 009.4	4 212.5	5.0	76.0
Lone parent									
With dependants	20.5	24.7	2.4	3.1	27.8	16.3	44.1	11.2	63.1
Without dependants	32.3	36.9	4.1	4.1	40.9	28.5	69.5	9.9	58.9
<i>Total lone parent</i>	52.8	61.6	6.5	7.2	68.8	44.8	113.6	10.4	60.6
Dependent student (b)	4.4	156.9	5.9	29.6	186.5	263.6	450.1	15.9	41.4
Non-dependent child (c)	526.1	607.7	98.2	102.5	710.2	84.8	795.0	14.4	89.3
Other family person	66.4	79.2	16.2	18.6	97.8	57.0	154.8	19.0	63.2
Non-family member	662.3	761.4	86.1	93.2	854.6	325.5	1 180.1	10.9	72.4
Lone person	355.0	403.5	46.2	49.9	453.4	249.8	703.3	11.0	64.5
Not living alone	307.3	357.9	39.9	43.3	401.2	75.6	476.8	10.8	84.1
<i>Total</i>	4 127.8	4 709.0	364.8	412.1	5 121.1	1 785.1	6 906.1	8.0	74.2
FEMALES									
Family member	1 617.6	3 095.2	154.8	247.9	3 343.0	2 538.7	5 881.7	7.4	56.8
Wife									
With dependants	514.5	1 196.3	37.2	66.1	1 262.4	719.8	1 982.1	5.2	63.7
Without dependants	642.8	1 005.0	31.9	43.4	1 048.4	1 084.6	2 133.0	4.1	49.1
<i>Total wife</i>	1 157.3	2 201.3	69.2	109.4	2 310.7	1 804.4	4 115.1	4.7	56.2
Lone parent									
With dependants	71.7	171.8	23.8	39.4	211.2	210.6	421.8	18.7	50.1
Without dependants	67.9	105.4	11.4	13.9	119.4	128.8	248.1	11.7	48.1
<i>Total lone parent</i>	139.6	277.2	35.2	53.4	330.6	339.4	670.0	16.2	49.3
Dependent student (b)	2.7	196.7	3.0	33.2	229.9	240.0	469.9	14.4	48.9
Non-dependent child (c)	276.0	361.5	40.4	43.6	405.1	49.7	454.8	10.8	89.1
Other family person	42.0	58.5	7.0	8.2	66.7	105.2	172.0	12.3	38.8
Non-family member	398.1	526.2	35.8	44.3	570.4	608.3	1 178.8	7.8	48.4
Lone person	209.1	275.0	16.3	19.6	294.6	545.9	840.5	6.7	35.0
Not living alone	189.0	251.2	19.5	24.7	275.9	62.4	338.3	8.9	81.5
<i>Total</i>	2 015.7	3 621.4	190.6	292.1	3 913.5	3 147.0	7 060.5	7.5	55.4
PERSONS									
Family member	5 083.1	7 042.8	433.5	566.7	7 609.5	3 998.3	11 607.8	7.4	65.6
Husband or wife									
With dependants	2 227.3	3 003.3	136.7	170.3	3 173.6	854.4	4 028.0	5.4	78.8
Without dependants	1 745.8	2 240.2	84.4	100.1	2 340.3	1 959.4	4 299.7	4.3	54.4
<i>Total husband or wife</i>	3 973.1	5 243.5	221.0	270.3	5 513.9	2 813.7	8 327.6	4.9	66.2
Lone parent									
With dependants	192.5	338.8	41.6	60.6	399.4	384.2	783.6	15.2	51.0
Without dependants	100.3	142.3	15.4	18.0	160.3	157.3	317.6	11.2	50.4
<i>Total lone parent</i>	192.5	338.8	41.6	60.6	399.4	384.2	783.6	15.2	50.9
Dependent student (b)	7.1	353.6	9.0	62.8	416.4	503.7	920.0	15.1	45.3
Non-dependent child (c)	802.2	969.2	138.7	146.2	1 115.3	134.4	1 249.8	13.1	89.2
Other family person	108.4	137.7	23.2	26.8	164.5	162.3	326.8	16.3	50.3
Non-family member	1 060.4	1 287.6	121.9	137.5	1 425.1	933.8	2 358.9	9.6	60.4
Lone person	564.0	678.5	62.5	69.5	748.0	795.7	1 543.8	9.3	48.4
Not living alone	496.4	609.1	59.4	68.0	677.0	138.1	815.1	10.0	83.1
<i>Total</i>	6 143.5	8 330.4	555.4	704.2	9 034.6	4 932.1	13 966.7	7.8	64.7

(a) Civilians who were residents of households where family status was determined. (b) Excludes persons aged 20–24 attending school. Also excludes sons or daughters aged 15–24 who are classified as husbands, wives or lone parents. (c) Aged 15 and over.

Source: Labour Force, Australia (6203.0).

## Employment

Broadly, people are considered to be employed if they are doing any paid work at all. Those people who have a job or a business, but were absent from work in the reference week, are also considered to be employed. Employment statistics are presented according to the demographic characteristics of employed persons, their occupation and industry, hours worked and whether they are full-time or part-time workers. Data for employees, whether they work in the private or government sector, and estimates for apprentices and qualified tradespersons, are also included in this section.

By relating employment levels to population levels, the magnitude of job growth in the economy can be evaluated. The measure relating

these two levels is the employment/population ratio. Its usefulness lies in the fact that, while movements in the employment level reflect net changes in the levels of persons holding jobs, movements in the ratio reflect net changes in the number of persons employed relative to changes in the size of the population. The overall employment/population ratio has been relatively steady in recent years and was 58.0% in 1997–98 (table 6.7).

By age, the ratio for 15–19 year olds jumped in 1994–95, then steadied in recent years; for the 20–24 group, it fell slightly from 1996–97. For 25–34 year olds, the ratio generally rose from 1992–93, to 74.8% in 1997–98. For males, the highest ratio (86.8%) was for those aged 35–44, while females aged 20–24 showed the highest proportion employed (68.1%).

**6.7 EMPLOYED PERSONS, Employment/Population Ratios(a)**

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Age group (years)	%	%	%	%	%	%
<b>MALES</b>						
15–19	41.0	42.8	45.9	46.2	46.4	45.4
20–24	72.2	72.9	76.2	76.1	75.3	74.9
25–34	83.0	83.6	84.8	86.0	85.5	85.6
35–44	85.9	85.9	86.3	87.0	86.4	86.8
45–54	82.8	82.3	83.6	83.5	82.8	82.0
55–59	64.4	64.6	66.1	66.0	66.5	66.5
60–64	41.2	41.2	43.1	42.7	42.1	42.8
Over 64	8.4	8.8	9.5	9.4	9.5	10.1
<b>Total</b>	<b>65.3</b>	<b>65.6</b>	<b>67.0</b>	<b>67.4</b>	<b>66.9</b>	<b>66.8</b>
<b>FEMALES</b>						
15–19	42.3	42.3	47.2	47.8	47.2	46.8
20–24	65.6	66.8	68.8	69.8	68.4	68.1
25–34	59.1	60.4	62.3	62.9	62.7	64.1
35–44	65.5	64.7	66.4	67.6	67.1	65.7
45–54	60.8	61.4	62.7	64.0	64.3	64.9
55–59	34.6	35.3	36.6	39.0	40.0	40.0
60–64	14.2	15.4	15.7	17.1	18.0	18.4
Over 64	2.1	2.6	2.4	2.7	2.8	2.9
<b>Total</b>	<b>46.6</b>	<b>47.0</b>	<b>48.6</b>	<b>49.5</b>	<b>49.3</b>	<b>49.4</b>
<b>PERSONS</b>						
15–19	41.6	42.5	46.5	47.0	46.8	46.1
20–24	69.0	72.5	72.5	73.0	71.9	71.5
25–34	71.0	71.9	73.4	74.4	74.1	74.8
35–44	75.7	75.2	76.3	77.2	76.6	76.2
45–54	72.0	72.1	73.4	73.9	73.7	73.5
55–59	49.7	50.2	51.6	52.7	53.5	53.5
60–64	27.6	28.3	29.4	29.9	30.0	30.6
Over 64	4.8	5.2	5.5	5.6	5.7	6.0
<b>Total</b>	<b>55.8</b>	<b>56.2</b>	<b>57.7</b>	<b>58.3</b>	<b>58.0</b>	<b>58.0</b>

(a) Employment/population ratio for any group is the number of employed persons expressed as a percentage of the civilian population aged 15 and over in the same group.

Source: Unpublished data, Labour Force Survey.

Information for employed persons is also shown according to their status in employment (i.e. employers, own-account workers, employees and contributing family workers). Following falls in 1996–97, the number of employers and own-account workers rose in 1997–98 to 358,000 and 857,400, respectively. Estimates of employees have steadily increased since 1992–93, to 7,185,400 in 1997–98. Estimates of the number of contributing family workers fell in 1997–98, following four years of relative stability between 1993–94 and 1996–97 (table 6.8).

Full-time workers are those who worked 35 hours or more during the reference week of

the Labour Force Survey or who usually work 35 hours or more each week. Part-time workers are those who usually work less than 35 hours a week and who did so during the reference week. In 1997–98, there were 4,246,100 males employed full time (88.0% of male employment). The number of females employed full time was 2,084,700 (56.7% of female employment). For males, part time work is most prevalent among younger (aged 15–24) and older (aged 55 and over) males, while for females, the incidence of part-time work is more evenly spread across age groups (table 6.9).

#### 6.8 EMPLOYED PERSONS, Status in Employment, Annual Average(a)

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
	'000	'000	'000	'000	'000	'000
Employers	339.3	348.3	355.6	363.9	339.6	358.0
Own-account workers	816.8	829.0	822.9	849.1	821.3	857.4
Employees	6 363.1	6 500.3	6 802.1	6 998.9	7 126.1	7 185.4
Contributing family workers	81.9	77.8	77.3	75.4	75.9	65.9
<b>Total</b>	<b>7 601.1</b>	<b>7 755.3</b>	<b>8 057.9</b>	<b>8 287.2</b>	<b>8 362.9</b>	<b>8 466.7</b>

(a) Annual average of quarterly data.

Source: Unpublished data, Labour Force Survey.

#### 6.9 EMPLOYED PERSONS, Full-time and Part-time Workers by Age, Annual Average(a)—1997–98

	Age group (years)								Total
	15–19	20–24	25–34	35–44	45–54	55–59	60–64	Over 64	
	'000	'000	'000	'000	'000	'000	'000	'000	'000
<b>MALES</b>									
Full-time workers	145.8	420.6	1 136.1	1 157.5	943.5	261.1	123.6	57.7	<b>4 246.1</b>
Part-time workers	156.5	96.0	85.7	68.9	63.9	33.7	32.3	41.8	<b>578.6</b>
<b>Total</b>	<b>302.0</b>	<b>516.6</b>	<b>1 221.9</b>	<b>1 226.4</b>	<b>1 007.5</b>	<b>294.8</b>	<b>155.9</b>	<b>99.5</b>	<b>4 824.6</b>
<b>FEMALES</b>									
Full-time workers	77.2	307.7	608.2	506.1	453.0	92.9	27.4	12.2	<b>2 084.7</b>
Part-time workers	218.6	150.0	315.9	436.0	328.8	78.0	39.8	24.9	<b>1 592.1</b>
<b>Total</b>	<b>295.8</b>	<b>457.7</b>	<b>924.1</b>	<b>942.2</b>	<b>781.8</b>	<b>170.9</b>	<b>67.2</b>	<b>37.1</b>	<b>3 676.8</b>

(a) Annual average of monthly data.

Source: Unpublished data, Labour Force Survey.

Tables 6.10 and 6.11 provide information on the number of employed persons and the proportion employed, by industry and occupation. In 1997–98, the Retail trade and Manufacturing industries were the two largest employing industries, followed by Property and business services, and Health and community services. Manufacturing was the largest employer of males, with 17.1% of all male workers in that

industry. The greatest number of female workers (17.4%) were in Retail trade. The occupation groups containing the largest number of employed persons were Professionals, and Intermediate clerical, sales and service workers. These occupation groups also contained the highest proportion of female workers. The largest occupation group for male workers was Tradespersons and related workers.

#### 6.10 EMPLOYED PERSONS BY INDUSTRY(a), Annual Average(b)—1997–98

Industry	Males		Females		Persons	
	No.	Proportion employed	No.	Proportion employed	No.	Proportion employed
	'000	%	'000	%	'000	%
Agriculture, forestry and fishing	304.1	6.3	132.4	3.6	436.5	5.2
Mining	74.9	1.6	8.3	0.2	83.2	1.0
Manufacturing	823.1	17.1	298.6	8.2	1 121.7	13.3
Electricity, gas and water supply	55.3	1.2	9.3	0.3	64.6	0.8
Construction	518.4	10.8	79.0	2.2	597.4	7.1
Wholesale trade	349.5	7.3	149.5	4.1	498.9	5.9
Retail trade	607.8	12.7	637.6	17.4	1 245.4	14.7
Accommodation, cafes and restaurants	183.0	3.8	220.6	6.0	403.6	4.8
Transport and storage	303.1	6.3	90.5	2.5	393.6	4.6
Communication services	99.8	2.1	48.7	1.3	148.5	1.8
Finance and insurance	136.9	2.9	175.3	4.8	312.3	3.7
Property and business services	503.8	10.5	391.2	10.7	895.1	10.6
Government administration and defence	185.9	3.9	154.6	4.2	340.5	4.0
Education	194.2	4.0	389.2	10.6	583.5	6.9
Health and community services	181.0	3.8	618.6	16.9	799.6	9.4
Cultural and recreational services	107.3	2.2	95.6	2.6	202.9	2.4
Personal and other services	175.3	3.6	164.2	4.5	339.5	4.0
<b>All industries</b>	<b>4 803.5</b>	<b>100.0</b>	<b>3 663.1</b>	<b>100.0</b>	<b>8 466.7</b>	<b>100.0</b>

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC). (b) Annual averages of quarterly data.

Source: Unpublished data, Labour Force Survey.

#### 6.11 EMPLOYED PERSONS BY OCCUPATION(a), Annual Average(b)—1997–98

Occupation	Males		Females		Persons	
	No.	Proportion employed	No.	Proportion employed	No.	Proportion employed
	'000	%	'000	%	'000	%
Managers and administrators	484.6	10.1	150.9	4.1	635.5	7.5
Professionals	761.9	15.9	721.6	19.7	1 483.6	17.5
Associate professionals	558.5	11.6	324.8	8.9	883.3	10.4
Tradespersons and related workers	1 036.8	21.6	111.3	3.0	1 148.1	13.6
Advanced clerical and service workers	43.9	0.9	346.9	9.5	390.8	4.6
Intermediate clerical, sales and service workers	407.5	8.5	1 023.0	27.9	1 430.5	16.9
Intermediate production and transport workers	664.0	13.8	104.1	2.8	768.2	9.1
Elementary clerical, sales and service workers	302.7	6.3	567.7	15.5	870.4	10.3
Labourers and related workers	543.6	11.3	312.8	8.5	856.5	10.1
<b>All occupations</b>	<b>4 803.5</b>	<b>100.0</b>	<b>3 663.1</b>	<b>100.0</b>	<b>8 466.7</b>	<b>100.0</b>

(a) Classified according to the Australian Standard Classification of Occupations (ASCO), Second Edition. (b) Averages calculated on quarterly estimates.

Source: Unpublished data, Labour Force Survey.

Tables 6.12 and 6.13, and graph 6.14, provide various views of the distribution of wage and salary earners between industries, between the private and public sectors, and across the States and Territories. It should be noted that these statistics are obtained from the Survey of Employment and Earnings, a survey of employers; as such they are complementary to, but not compatible with, those from the household-based Labour Force Survey. While the latter provides better estimates of overall employment movements at the national and State/Territory levels, the former provides dissections for industry by public/private sector.

Estimates of the number of wage and salary earners in the private and public sectors between February 1996 and February 1998 are shown in table 6.12. During this time period, the number of wage and salary earners in the private sector increased by 4.0% to 5,356,500, while in the public sector the number declined by 6.7% to 1,433,700. The major part of the public sector decline occurred in the Commonwealth government sector.

The privatisation of public trading and financial enterprises in recent years has influenced the number of employees in both Commonwealth and State government sectors, particularly in Electricity, gas and water supply, Transport and storage and Finance and insurance.

**6.12 WAGE AND SALARY EARNERS, Industry and Private/Public Sector**

Industry	Private sector			Public sector		
	Feb 1996	Feb 1997	Feb 1998	Feb 1996	Feb 1997	Feb 1998
	'000	'000	'000	'000	'000	'000
Agriculture, forestry and fishing(a)	..	..	..	5.5	5.5	5.7
Mining	79.7	80.2	76.1	1.5	2.1	2.0
Manufacturing	942.0	937.6	932.3	10.3	4.8	4.5
Electricity, gas and water supply	5.9	9.6	10.0	62.6	53.7	45.0
Construction	308.6	315.5	318.3	26.2	17.1	17.0
Wholesale trade	449.2	460.8	465.3	1.6	1.6	1.6
Retail trade	927.6	988.4	991.6	0.3	0.3	0.3
Accommodation, cafes and restaurants	306.9	379.2	379.1	0.7	0.5	0.5
Transport and storage	254.8	230.4	214.8	71.1	68.4	56.4
Communication services	22.1	25.3	22.7	126.5	114.1	98.1
Finance and insurance	253.2	268.4	260.3	53.0	9.4	6.5
Property and business services	656.1	677.8	723.4	45.3	33.6	26.9
Government administration and defence(b)	..	..	..	342.8	339.1	350.7
Education	179.9	161.3	178.2	372.1	395.8	397.9
Health and community services	438.3	462.8	468.4	302.0	300.3	308.8
Cultural and recreational services	146.2	139.1	151.3	29.3	26.1	24.5
Personal and other services	177.7	170.8	164.7	86.6	85.8	87.1
<b>All industries</b>	<b>5 148.1</b>	<b>5 307.3</b>	<b>5 356.5</b>	<b>1 537.3</b>	<b>1 457.8</b>	<b>1 433.7</b>

(a) Out of scope of survey for private sector. (b) Excludes members of Australia's permanent defence forces and employees of its embassies, consulates etc. overseas.

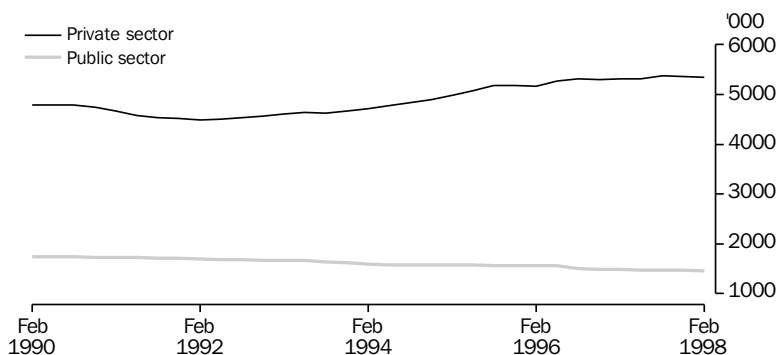
Source: *Wage and Salary Earners, Australia* (6248.0).

**6.13 WAGE AND SALARY EARNERS, Private/Public Sector—February 1998**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Sector	'000	'000	'000	'000	'000	'000	'000	'000	'000
Private	1 914.7	1 401.0	898.6	381.9	530.6	117.9	45.0	66.9	5 356.5
Public									
Commonwealth	73.4	61.6	34.3	18.0	20.8	6.1	3.5	50.5	268.2
State	348.7	207.2	207.2	88.0	108.8	29.6	16.1	17.9	1 023.6
Local	44.9	34.2	35.8	8.0	13.3	3.7	2.0	..	141.9
Total	467.1	303.0	277.3	114.0	142.8	39.4	21.6	135.3	1 433.7
<b>Total</b>	<b>2 381.8</b>	<b>1 703.9</b>	<b>1 175.9</b>	<b>495.9</b>	<b>673.5</b>	<b>157.3</b>	<b>66.5</b>	<b>135.3</b>	<b>6 790.1</b>

Source: *Wage and Salary Earners, Australia* (6248.0).

6.14 WAGE AND SALARY EARNERS, SECTOR, Trend Estimates



Source: *Wage and Salary Earners, Australia* (6248.0).

### Labour mobility

Labour mobility refers to a change of employer/business by workers or a change in locality of their employment, in a specific 12 month period. Labour mobility data are an important source of information on the dynamic nature of the labour force.

Table 6.15 shows that, in the 12 months ending February 1998, there were an estimated 9,243,800 persons aged 15–69 years who had worked at some time during the year. Of these, 91% were working at February 1998, 4% were looking for work and 5% were not in the labour force.

Of the people who worked at some time during the year ending February 1998, 14% (1,321,900) were job mobile, that is, they changed their employer/business and/or location within the previous year. Since labour mobility data were first collected in 1976, job mobility levels have been slightly higher for males than females.

Job mobility decreased with age from a high of 25% in the 20–24 years age group to a low of 5% for those aged 55–69 years.

Job mobility for those with and without post-school qualifications was similar, 15% and 14% respectively.

Of the 7,670,100 persons who were working both in February 1997 and in February 1998, 86% had been in the same job (i.e. with the same employer at the same location) for the entire year. Of those who were job mobile, 57% changed to another job in the same industry and 43% changed to a job in a different industry. On an industry basis, persons working in Agriculture, forestry and fishing were most likely to stay in their current job for the full year (92%), while persons employed in Accommodation, cafes and restaurants were the least likely (77%). For occupation groups, Managers and administrators were the most likely to have stayed in their current job for the full year (90%) and Elementary clerical sales and service workers were the least likely (82%).

Some 1,981,200 (21%) persons who had worked at some time during the year ceased a job during the year. Of these, 64% were job leavers and 36% were job losers. Over half (58%) of job losers were retrenched and, of those retrenched, 45% had been in their last job for less than one year.

**6.15 LABOUR MOBILITY(a), By Sex—February**

	Unit	1990	1992	1994	1996	1998
<b>MALES</b>						
Changed employer/business or locality	%	18.6	13.0	14.9	16.2	14.5
Changed employer/business	%	14.9	9.7	11.5	12.7	11.4
Changed locality but not employer/business	%	3.7	3.3	3.4	3.4	3.1
Did not change employer/business or locality	%	81.4	87.0	85.1	83.8	85.5
<b>Total</b>	'000	4 927.6	4 880.1	4 842.1	5 112.1	5 133.2
<b>FEMALES</b>						
Changed employer/business or locality	%	18.1	12.5	14.0	15.2	14.0
Changed employer/business	%	15.0	9.6	11.1	12.5	11.3
Changed locality but not employer/business	%	3.1	2.9	2.9	2.8	2.7
Did not change employer/business or locality	%	82.0	87.5	86.0	84.8	86.0
<b>Total</b>	'000	3 700.4	3 684.0	3 760.3	4 029.8	4 110.6
<b>PERSONS</b>						
Changed employer/business or locality	%	18.4	12.8	14.5	15.8	14.3
Changed employer/business	%	14.9	9.6	11.3	12.6	11.4
Changed locality but not employer/business	%	3.4	3.1	3.2	3.1	2.9
Did not change employer/business or locality	%	81.6	87.2	85.5	84.2	85.7
<b>Total</b>	'000	8 628.0	8 564.1	8 602.3	9 141.9	9 243.8

(a) Persons aged 15-69 who worked at some time during the 12 months ending February.

Source: *Labour Mobility, Australia* (6209.0).

**Underemployed workers**

At its broadest level, underemployment is a preference to work more hours by people who are not working full-time hours. The number of underemployed workers is an important indicator of labour market performance. It highlights the unsatisfied aspirations of many workers for adequate work and greater earnings.

In September 1997, there were 8,485,900 employed persons aged 15 and over. Of these, 515,500 (6%) usually worked part time and wanted to work more hours, 37,900 (1%) usually worked full time but worked part time for economic reasons and 7,932,500 (93%) were fully employed (see table 6.16). Of all part-time workers who wanted more hours, 62% were female. Some 62% of part-time workers who wanted more hours reported that they would like to work full-time hours.

**6.16 UNDEREMPLOYMENT STATUS OF EMPLOYED PERSONS—September 1997**

	Males	Females	Persons
Fully employed workers	4 559.3	3 373.2	7 932.5
Full-time workers	4 174.1	2 065.5	6 239.6
Part-time workers	385.1	1 307.6	1 692.8
Usually work full-time but worked part-time for economic reasons	33.2	4.8	37.9
Usually work part-time and want more hours	197.0	318.5	515.5
Usually work part-time and want more part-time hours	41.8	152.1	193.9
Usually work part-time and want full-time hours	155.2	166.4	321.6
<b>Employed persons</b>	<b>4 789.4</b>	<b>3 696.5</b>	<b>8 485.9</b>

Source: *Underemployed Workers, Australia* (6265.0).



Over half (54%) of all persons working part time and wanting to work more hours were aged less than 35 years. In comparison, 43% of fully employed workers were aged less than 35 years. The 15–19 and 20–24 year age groups contributed 16% and 18% respectively of all persons working part time and wanting more hours. However, these groups made up only 6% and 11% respectively of fully employed workers.

The median duration of the current period of insufficient work for persons working part time and wanting to work more hours was 26 weeks for males and 30 weeks for females. Duration generally increased with age for both males and females. For females, the median duration ranged from 22 weeks for those aged 15–19 years, to 52 weeks for those aged 55–59 years. For males, the median duration ranged from 16 weeks for those aged 20–24 years to 52 weeks for those aged 55 years and over.

There were 423,800 persons working part time and wanting to work more hours, who were looking for, or available to start work for more hours in the survey reference week. Some 24% of these workers wanted less than 10 extra hours of work each week, while 42% wanted 10–19 extra hours. The average number of extra hours wanted was 16 (19 hours for males, 15 hours for females). The average number of extra hours wanted was higher for males than females in every age group.

As graph 6.17 shows, of those who usually worked 21–34 hours, the majority preferred 10–19 extra hours per week (62%). Of those who

usually worked 11–20 hours the most common preference was to work 20–29 extra hours (46%). Of those who usually worked 10 hours or less a week, about half (52%) wanted up to 19 extra hours.

## Unemployment

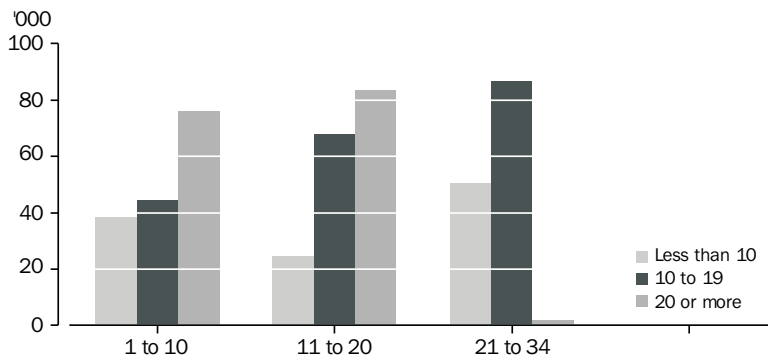
In the Labour Force Survey, people are considered to be unemployed if they satisfy three criteria: they are not employed, they are available for work, and they are taking active steps to find work.

Two important measures of unemployment are the number of persons unemployed and the unemployment rate. The unemployment rate is defined as the number of unemployed persons expressed as a percentage of the labour force.

The number of unemployed persons in annual average terms peaked at 940,500 in 1992–93 before falling to 766,700 in 1995–96. After a rise in 1996–97, the number of unemployed persons fell to 768,100 in 1997–98 (table 6.18).

The number of persons unemployed for 52 weeks or more (the 'long-term unemployed') peaked in 1992–93 at 336,300, before falling to 226,500 in 1995–96. In 1997–98, the estimate of long-term unemployment had risen to 243,700. Of all unemployed persons in 1997–98, 31.7% had been unemployed for 52 weeks or more, compared with 35.8% in 1992–93 (table 6.18).

**6.17 USUALLY WORK PART-TIME: USUAL HOURS WORKED AND PREFERRED NUMBER OF EXTRA HOURS—September 1997**



Source: *Underemployed Workers, September 1997* (6265.0)

**6.18 UNEMPLOYED PERSONS, Duration of Unemployment, Annual Average**

	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
	'000	'000	'000	'000	'000	'000
<b>DURATION OF UNEMPLOYMENT (WEEKS)</b>						
Under 4	121.7	124.5	123.3	129.2	135.5	126.6
4 and under 13	173.0	169.6	159.4	167.7	178.3	161.6
13 and under 26	134.0	127.2	110.6	116.7	116.1	108.6
26 and under 52	175.4	159.3	127.7	126.6	133.5	127.7
52 and over	336.3	334.8	273.6	226.5	233.1	243.7
<b>Total</b>	<b>940.5</b>	<b>915.5</b>	<b>794.6</b>	<b>766.7</b>	<b>796.5</b>	<b>768.1</b>
<b>% OF TOTAL UNEMPLOYMENT</b>						
Under 4	12.9%	13.6%	15.5%	16.9%	17.0%	16.5%
4 and under 13	18.4%	18.5%	20.1%	21.9%	22.4%	21.0%
13 and under 26	14.2%	13.9%	13.9%	15.2%	14.6%	14.1%
26 and under 52	18.6%	17.4%	16.1%	16.5%	16.8%	16.6%
52 and over	35.8%	36.6%	34.4%	29.5%	29.3%	31.7%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Unpublished data, Labour Force Survey.

The annual average unemployment rate for all persons peaked at 11.0% in 1992-93. The rate has been falling since then, apart from a small rise in 1996-97. For males, the rate fell to 8.8% in 1995-96 and 1996-97, from a peak of 11.7% in 1992-93. In 1997-98, the rate fell to 8.5%. The female rate fell from 10.0% in 1993-94 to 8.0% in 1995-96. Following a rise to 8.4% in 1996-97, the rate fell to 8.0% in 1997-98. (graph 6.19).

By examining particular groups and characteristics of the unemployed, various economic and social aspects of unemployment can be analysed. While the aggregate unemployment estimates presented above are important general indicators, other measures such as whether seeking full-time or part-time work, for different age groups by sex, provide further insight into the nature of unemployment (table 6.20).

**6.19 UNEMPLOYMENT RATE, Annual Average**

Source: Labour Force, Australia (6203.0).

### 6.20 UNEMPLOYED PERSONS, Age and Whether Looking for Full-time or Part-time Work, Annual Average—1997–98

	No. unemployed			Unemployment rate		
	Males	Females	Persons	Males	Females	Persons
	'000	'000	'000	%	%	%
LOOKING FOR FULL-TIME WORK						
Aged 15–19	49.2	36.4	85.6	25.2	31.8	27.6
Looking for first job	27.8	21.7	49.5	..	..	..
Attending school/tertiary educational institution full-time	5.5	3.9	9.4	45.1	45.5	45.3
Not attending school/tertiary educational institution full-time	43.7	32.5	76.2	23.9	31.0	26.5
Aged 20–24	74.2	45.1	119.3	15.0	12.8	14.1
Looking for first job	12.7	11.0	23.7	..	..	..
Attending a tertiary educational institution full-time	3.2	2.8	6.0	28.8	27.8	28.3
Not attending a tertiary educational institution full-time	71.0	42.3	113.3	14.7	12.3	13.7
Aged 25–34	97.3	48.6	145.8	7.9	7.4	7.7
Aged 35–44	75.3	46.0	121.3	6.1	8.3	6.8
Aged 45–54	57.9	31.9	89.8	5.8	6.6	6.0
Aged 55 and over	35.1	8.4	43.6	7.4	6.0	7.0
<b>Total</b>	<b>389.0</b>	<b>216.4</b>	<b>605.5</b>	<b>8.4</b>	<b>9.4</b>	<b>8.7</b>
LOOKING FOR PART-TIME WORK						
Aged 15–19	31.3	35.4	66.7	16.6	13.9	15.1
Attending school/tertiary educational institution full-time	28.3	31.7	60.1	18.8	15.8	17.1
Not attending school/tertiary educational institution full-time	2.9	3.7	6.6	7.9	6.9	7.3
Aged 20–24	10.3	13.4	23.7	9.7	8.2	8.8
Attending a tertiary educational institution full-time	7.0	6.8	13.7	13.8	10.7	12.0
Not attending a tertiary educational institution full-time	3.3	6.6	10.0	6.0	6.6	6.4
Aged 25–34	5.3	19.7	25.0	5.8	5.9	5.9
Aged 35–44	4.2	19.8	23.9	5.7	4.3	4.5
Aged 45–54	3.8	10.7	14.5	5.6	3.2	3.6
Aged 55 and over	4.4	4.4	8.8	3.9	3.0	3.4
<b>Total</b>	<b>59.2</b>	<b>103.4</b>	<b>162.7</b>	<b>9.3</b>	<b>6.1</b>	<b>7.0</b>

Source: Unpublished data, Labour Force Survey.

### Job search experience

Two key aspects of a person's search for work are the steps taken to find work, and barriers they encounter in obtaining work. Characteristics such as age, sex and education of an individual looking for work can often influence their job search experience and outcomes.

In July 1997, steps taken to find work included registering with the Commonwealth Employment Service (CES), contacting prospective employers and other active steps such as answering a newspaper advertisement,

checking factory/CES noticeboards, advertising or tendering for work or contacting friends or relatives. Common difficulties in finding work include: being considered too young or too old by employers, the perception that there were too many applicants for available jobs, or there being no vacancies at all.

Table 6.21 shows that, in July 1997, almost three-quarters (74%) of unemployed persons were registered with the CES and also contacted prospective employers. A further 22% of unemployed persons contacted prospective employers but were not registered with the CES.

**6.21 UNEMPLOYED PERSONS(a), Active Steps Taken to Find Full-time or Part-time Work—July 1997**

	Looking for full-time work			Looking for part-time work			Total		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
Active steps taken to find work	'000	'000	'000	'000	'000	'000	'000	'000	'000
Registered with the CES and									
Took no other active steps	*1.6	*1.0	*2.6	*0.0	*0.7	*0.7	*1.6	*1.7	*3.2
Contacted prospective employers	338.3	156.6	494.9	14.1	22.8	36.9	352.4	179.5	531.9
Took other active steps	6.2	*5.0	11.1	*0.4	*3.3	*3.7	6.6	8.2	14.8
Total	346.0	162.6	508.6	14.5	26.8	41.3	360.5	189.4	549.9
Not registered with the CES and									
Contacted prospective employers	43.9	41.3	85.1	24.2	47.6	71.8	68.0	88.9	156.9
Took other active steps	*1.9	*3.0	*4.9	*1.3	*4.4	5.7	*3.2	7.4	10.7
Total	45.8	44.3	90.1	25.5	52.0	77.5	71.3	96.3	167.6
<b>Total</b>	<b>391.8</b>	<b>206.9</b>	<b>598.7</b>	<b>40.0</b>	<b>78.8</b>	<b>118.8</b>	<b>431.8</b>	<b>285.7</b>	<b>717.5</b>

(a) Excludes persons who have been stood down.

Source: *Job Search Experience of Unemployed Persons, Australia* (6222.0).

As table 6.22 shows, in July 1997 the most commonly reported main difficulties in finding work were 'considered too young or too old by employers' (15% of unemployed persons) and 'too many applicants for available jobs' (14%). Other common difficulties were 'no vacancies at all' (13%) and 'lacked necessary skills or education' (12%).

The main difficulties in finding work most commonly reported by the long-term unemployed were 'considered too young or too old by employers' (20%) and 'lacked necessary skills or education' (14%). The majority (87%) of long-term unemployed persons in July 1997 had not received any offers of employment in their current period of unemployment. This was slightly lower than in July 1996 when 90% had not received any offers of employment.

**6.22 UNEMPLOYED PERSONS(a), Main Difficulty in Finding Work and Duration of Current Period of Unemployment—July 1997**

	Duration of current period of unemployment (weeks)					Total	Average duration
	1 and under 8	8 and under 26	26 and under 52	1 and under 2 years	2 years and over		
Main difficulty in finding work	'000	'000	'000	'000	'000	'000	weeks
Considered too young or too old by employers	15.4	17.0	23.5	18.5	29.8	104.3	78.0
No vacancies at all	18.0	20.1	21.8	14.5	16.7	90.9	60.0
No vacancies in line of work	19.9	20.5	11.2	8.2	5.6	65.4	37.0
Insufficient work experience	15.6	18.0	17.5	10.9	12.7	74.6	57.0
Too many applicants for available jobs	20.4	30.1	25.8	13.8	14.0	104.0	47.0
Lacked necessary skills or education	15.0	23.6	15.2	16.9	15.7	86.5	59.0
Too far to travel, transport problems	7.5	10.7	7.8	5.6	6.0	37.7	54.0
Own ill health or disability	*4.6	10.0	9.4	8.4	10.4	42.8	71.0
Language difficulties	*1.1	*3.1	*5.0	*4.1	*5.2	18.5	69.0
Unsuitable hours	8.8	*2.7	*2.1	*1.7	*1.0	16.4	27.0
Difficulties with childcare, other family responsibilities	*3.8	*4.4	*3.3	*2.0	*3.4	16.9	66.0
Other difficulties(b)	6.5	*2.6	*3.8	*3.7	*5.0	21.6	58.0
No difficulties reported	24.4	5.5	*3.8	*2.4	*1.9	37.9	20.0
<b>Total</b>	<b>161.2</b>	<b>168.1</b>	<b>150.2</b>	<b>110.7</b>	<b>127.3</b>	<b>717.5</b>	<b>56.0</b>

(a) Excludes persons who have been stood down. (b) Includes persons who reported difficulties because of ethnic background.

Source: *Job Search Experience of Unemployed Persons, Australia* (6222.0).

## Job vacancies

Job vacancies statistics, taken together with employment statistics, help in assessing the demand for labour.

A job vacancy is a job available for immediate filling on the survey reference day and for which recruitment action has been taken by the employer.

The estimated number of job vacancies in Australia peaked at 73,100 in May 1989 and then fell rapidly to a low of 24,300 in May 1992. In May 1998, the job vacancies level was 73,300. The States with the highest number of vacancies in May 1998 were NSW and Victoria (the latter with a large increase from May 1997 to May 1998 (table 6.23). From May 1997 to May 1998, the majority of industries showed an increase in the number of job vacancies (table 6.24).

**6.23 JOB VACANCIES, By State/Territories**

	May 1993	May 1994	May 1995	May 1996	May 1997	May 1998
State/Territory	'000	'000	'000	'000	'000	'000
New South Wales	12.9	17.7	23.9	24.5	19.6	20.5
Victoria	5.4	15.3	10.2	11.6	11.5	20.2
Queensland	4.9	6.1	6.1	7.3	12.1	* 15.4
South Australia	* 1.8	* 2.4	3.3	* 2.4	3.0	* 2.7
Western Australia	* 2.5	4.4	6.2	5.4	* 8.6	11.0
Tasmania	0.4	0.8	* 1.7	* 0.8	* 1.4	* 0.6
Northern Territory	* 0.6	0.7	1.0	0.9	0.9	1.6
Australian Capital Territory	* 1.6	* 1.9	1.3	0.8	* 1.0	1.4
<b>Australia</b>	<b>30.2</b>	<b>49.4</b>	<b>53.7</b>	<b>53.6</b>	<b>58.1</b>	<b>73.3</b>

Source: *Job Vacancies and Overtime, Australia* (6354.0).

**6.24 JOB VACANCIES, By Industry**

	May 1994	May 1995	May 1996	May 1997	May 1998
Industry	'000	'000	'000	'000	'000
Mining	0.4	1.2	* 2.8	1.2	0.8
Manufacturing	6.5	5.9	8.2	5.8	6.4
Electricity, gas and water supply	0.2	0.2	0.2	* 0.3	0.2
Construction	* 1.7	* 3.5	* 1.1	* 4.6	* 6.0
Wholesale trade	* 3.3	4.4	2.2	* 4.9	* 5.9
Retail trade	8.4	7.1	* 10.2	* 6.9	11.9
Accommodation, cafes and restaurants	* 1.3	3.5	2.8	4.6	* 3.5
Transport and storage	* 1.2	* 0.9	* 1.9	0.6	* 1.3
Communication services	* 0.6	0.2	0.2	* 0.2	0.2
Finance and insurance	2.5	4.6	2.9	3.9	2.4
Property and business services	7.9	* 5.7	7.4	10.2	* 17.4
Government administration and defence	2.8	3.4	2.5	3.3	3.8
Education	2.5	2.8	2.6	2.6	3.2
Health and community services	7.4	6.0	5.2	6.7	6.5
Cultural and recreational services	* 1.3	* 1.1	1.1	1.5	1.0
Personal and other services	* 1.4	* 3.1	* 2.0	* 1.0	* 2.8
<b>All industries</b>	<b>49.4</b>	<b>53.7</b>	<b>53.6</b>	<b>58.1</b>	<b>73.3</b>

Source: *Job Vacancies and Overtime, Australia* (6354.0).

## Retrenchment and redundancy

In July 1997, the number of people aged 18–64 who had held a job in the three years to 30 June 1997 was estimated at 9,339,200. Of these, 685,400 (7%) had been retrenched or made redundant on one or more occasions in that period.

Of those who had been retrenched or made redundant during the survey reference period, 68% were male, compared to 56% of all employees in July 1997—partly reflecting a high number of retrenchments in traditionally ‘male-oriented’ industries. Some 56% of people who had been retrenched or made redundant in the three years to 30 June 1997 did not have post-school qualifications, compared with 50% of all employees; and 38% of retrenched employees had spent less than one year in the job from which they were retrenched, compared with 21% of all employees in July 1997 who had held their job for less than one year.

The proportion of workers who had been retrenched or made redundant in the three years to 30 June 1997 and were unemployed in July 1997 was between 24% and 28% in each age group, with the exception of those aged 18–24 who recorded 43% (table 6.25).

Of the people who had been retrenched or made redundant in the three years to 30 June 1997, 55% were employed in July 1997, 29% were unemployed and 16% were not in the labour force.

The labour force status of those who had been retrenched or made redundant was influenced by age, with older workers more likely to leave the labour force than their younger counterparts.

In relation to the jobs from which people were retrenched or made redundant, 71% were permanent while 84% were full time. The industries where the greatest number of retrenchments and redundancies occurred were Manufacturing, Retail trade and Construction (table 6.26) and the majority of retrenchments and redundancies occurred in occupations with low to medium skill levels.

**6.25 RETRENCHED OR MADE REDUNDANT, Age and Current Labour Force Status—July 1997**

	Current labour force status						Total
	Employed		Unemployed		Not in the labour force		
Age (years)	'000	%	'000	%	'000	%	'000
18–24	64.6	48.6	56.7	42.7	11.6	8.7	133.0
25–34	113.4	59.3	53.3	27.9	24.4	12.8	191.1
35–44	93.4	62.0	37.1	24.6	20.2	13.4	150.8
45–54	80.4	57.5	36.5	26.1	22.9	16.4	139.7
55–64	23.1	32.6	16.9	23.9	30.9	43.5	70.9
<b>Total</b>	<b>374.9</b>	<b>54.7</b>	<b>200.5</b>	<b>29.3</b>	<b>110.0</b>	<b>16.1</b>	<b>685.4</b>

Source: Retrenchment and Redundancy, July 1997 (6266.0).

## 6.26 RETRENCHED OR MADE REDUNDANT, Industry of Job from which Retrenched and Current Labour Force Status—July 1997

Industry of job from which retrenched/redundant	Current labour force status						
	Employed		Unemployed		Not in the labour force		Total
	'000	%	'000	%	'000	%	
Agriculture, forestry and fishing	8.7	48.6	6.7	37.3	*2.5	*14.1	18.0
Mining	7.2	65.6	*2.6	*23.5	*1.2	*10.9	10.9
Manufacturing	89.0	53.4	53.6	32.1	24.2	14.5	166.9
Electricity, gas and water supply	8.1	41.6	5.6	29.0	5.7	29.4	19.3
Construction	36.0	60.9	18.2	30.8	*4.9	*8.3	59.1
Wholesale trade	27.4	59.0	12.7	27.5	6.3	13.5	46.4
Retail trade	41.9	51.1	27.5	33.6	12.6	15.3	82.0
Accommodation, cafes and restaurants	20.0	54.0	12.3	33.2	*4.7	*12.8	37.0
Transport and storage	15.7	51.5	9.6	31.4	5.3	17.2	30.6
Communication services	7.2	41.0	*4.2	*23.8	6.2	35.2	17.5
Finance and insurance	15.9	68.8	*2.0	*8.6	5.2	22.5	23.1
Property and business services	30.3	63.8	12.0	25.2	5.2	11.0	47.6
Government administration and defence	20.3	51.3	8.6	21.8	10.7	27.0	39.5
Education	12.1	56.4	5.5	25.6	*3.9	*18.0	21.5
Health and community services	20.1	59.3	7.5	22.2	6.3	18.5	33.9
Cultural and recreational services	7.9	54.4	*4.0	*27.2	*2.7	*18.4	14.6
Personal and other services	7.1	40.3	7.9	44.8	*2.6	*14.9	17.6
<b>Total</b>	<b>374.9</b>	<b>54.7</b>	<b>200.5</b>	<b>29.3</b>	<b>110.0</b>	<b>16.1</b>	<b>685.4</b>

Source: *Retrenchment and Redundancy, July 1997* (6266.0).

### Persons not in the labour force

Persons not in the labour force represent that group of the population who, during the reference week of a labour force survey, are neither employed nor unemployed (see diagram 6.1). Interest in this group centres primarily around their potential to participate in the labour force and their reasons for not currently participating.

Some persons not in the labour force are classified as marginally attached to the labour force because they want to work and may be looking for work or available to start work. Discouraged job seekers are among those persons marginally attached to the labour force. They are persons who want to work and are available to start work, but are not actively looking for work as they believe they cannot find a job.

Of the 3.7 million persons aged 15–69 years not in the labour force at September 1997, the majority (66%) were female. The proportion of persons not in the labour force rises with age from the 35–44 years age group (graph 6.27).

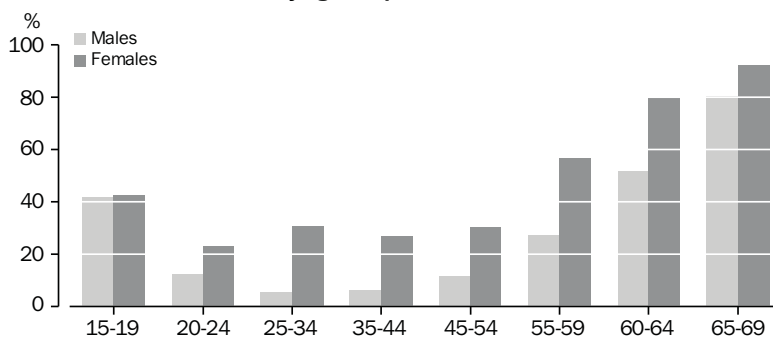
Some 24% of persons not in the labour force were marginally attached to it (based on table 6.28). An estimated 71% of these potential labour force participants was female.

Of those marginally attached, 94% were not actively looking for work but were available to start work within four weeks, and 6% were actively looking for work but unavailable to start work in the reference week. Of those not actively looking for work, for males the most commonly reported reasons were 'attending an educational institution' (37%) and 'own ill health/physical disability' (20%). In contrast, for females the most commonly reported reasons were 'childcare' (33%), 'attending an educational institution' (14%) and 'other family considerations' (10%).

In September 1997, there were 118,400 discouraged job seekers, almost unchanged from September 1996. The majority of female discouraged job seekers were aged 35–59 years (56%). In contrast, the majority of male discouraged job seekers were aged 55–69 years (57%).

Some 61% of both male and female discouraged job seekers reported that they might enter, or intended to enter, the labour force in the next 12 months.

**6.27 PROPORTION OF PERSONS NOT IN THE LABOUR FORCE,  
By Age—September 1997**



Source: *Persons Not in the Labour Force, Australia* (6220.0).

**6.28 CIVILIAN POPULATION AGED 15–69, Labour Force Status—September**

	1992	1993	1994	1995	1996	1997
	'000	'000	'000	'000	'000	'000
Persons in the labour force	8 647.5	8 744.6	8 875.5	9 057.0	9 183.1	9 225.4
Persons not in the labour force						
With marginal attachment to the labour force						
Wanted to work and were actively looking for work						
Were available to start work within four weeks	33.8	34.8	38.4	32.8	34.7	35.7
Were not available to start work within four weeks	25.3	23.5	22.9	31.0	23.3	17.6
Total	59.1	58.3	61.4	63.8	58.0	53.3
Wanted to work but not actively looking for work and available to start work within four weeks						
Discouraged jobseekers	145.6	147.4	106.5	111.9	118.9	118.4
Other	641.7	702.0	605.5	687.1	702.6	718.7
Total	787.3	849.5	712.0	799.0	821.5	837.2
Total with marginal attachment to the labour force	846.4	907.8	773.3	862.8	879.6	890.5
Without marginal attachment to the labour force(a)	2 815.9	2 769.8	2 789.7	2 703.5	2 735.8	2 803.7
Total persons not in the labour force	3 662.3	3 677.5	3 563.0	3 566.3	3 615.4	3 694.2
Civilian population aged 15–69	12 309.8	12 422.1	12 438.5	12 623.3	12 798.5	12 919.6

(a) Includes persons who were permanently unable to work.

Source: *Persons Not in the Labour Force, Australia* (6220.0).

## Retirement and retirement intentions

In November 1997, the population aged 45 years or more was 6,022,000, compared with 5,771,500 in November 1994. In November 1997, 3,215,400 (53% of the population aged 45 years or more) had retired from full-time work (table 6.29) and 2,103,900 (35%) were working full-time and intended to retire from full time work. A further 452,400 had never worked full-time and had no intention to do so, while 244,300 were working full time and did not intend to retire from full time work.

There was a large difference in the average age at retirement from full-time work for males and females in November 1997 (58 years and 41 years respectively). Changes in patterns of retirement over time are evident for both males and females. From table 6.29 it can be seen that in November 1997, 47% of males aged 45 and over who had retired from full-time work did so aged less than 60—this compares with 42% in 1994, 41% in October 1992, and 37% in November 1989. In contrast, the proportion of females retiring from full-time work aged less than 45 decreased from 61% in November 1989 to 54% in November 1997.



**6.29 PERSONS AGED 45 AND OVER(a) RETIRED FROM FULL-TIME WORK, Age at Retirement**

	Less than 45	45–49	50–54	55–59	60–64	65–69	70 and over	
	'000	'000	'000	'000	'000	'000	'000	Total
<b>MALES</b>								
November 1989	59.7	38.4	90.6	192.2	368.5	258.7	31.9	<b>1 040.0</b>
October 1992	78.4	50.4	110.2	215.3	374.1	260.5	32.4	<b>1 121.3</b>
November 1994	91.9	68.4	120.4	248.5	410.4	288.6	40.9	<b>1 269.2</b>
November 1997	91.1	85.6	139.9	288.8	401.9	253.3	36.3	<b>1 296.9</b>
<b>FEMALES</b>								
November 1989	972.2	122.2	175.7	149.0	136.0	39.5	7.4	<b>1 602.0</b>
October 1992	1 004.8	124.0	183.4	159.1	154.8	43.6	9.1	<b>1 678.8</b>
November 1994	1 061.1	162.9	206.1	208.5	179.4	46.6	12.4	<b>1 876.9</b>
November 1997	1 044.7	173.4	240.7	220.9	182.8	49.7	6.2	<b>1 918.4</b>
<b>PERSONS</b>								
November 1989	1 031.9	160.6	266.3	341.2	504.4	298.2	39.2	<b>2 641.9</b>
October 1992	1 083.2	174.4	293.5	374.5	528.9	304.0	41.5	<b>2 800.1</b>
November 1994	1 153.0	231.2	326.5	457.0	589.8	335.3	53.3	<b>3 146.1</b>
November 1997	1 135.8	259.0	380.6	509.7	584.7	303.0	42.5	<b>3 215.4</b>

(a) At time of survey. Some of these persons were aged less than the age groups shown at retirement.

Source: Unpublished data, Retirement and Retirement Intentions.

**6.30 RETIRED FROM THE LABOUR FORCE, Age at Retirement**

	Retired from full-time work and part-time work	Never worked full-time and retired from part-time work	Never worked full-time or part-time	Total
Age at November 1997 (years)				
45–49	141.1	*3.9	23.7	<b>168.6</b>
50–54	211.6	8.7	24.8	<b>245.1</b>
55–59	286.0	8.6	35.2	<b>329.8</b>
60–64	424.0	13.9	36.8	<b>474.7</b>
65–69	527.2	10.3	42.6	<b>580.1</b>
70 and over	1 119.8	27.6	178.2	<b>1 325.6</b>
Males	1 168.4	*2.6	24.2	<b>1 195.2</b>
Females	1 541.2	70.5	317.1	<b>1 928.7</b>
Persons	2 709.6	73.0	341.3	<b>3 123.9</b>

Source: Retirement and Retirement Intentions, Australia (6238.0).

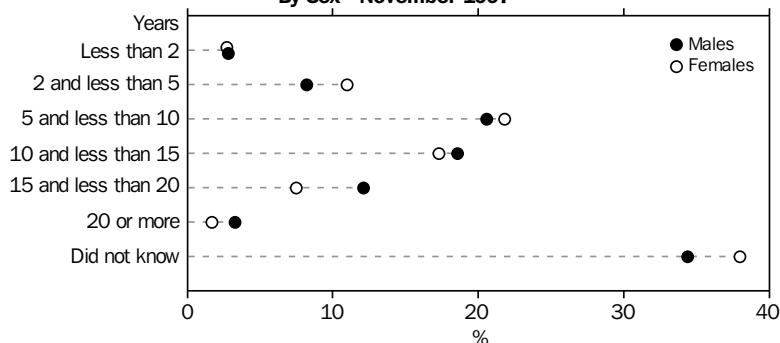
In November 1997, 3,123,900 people had retired from all labour force activity (working or looking for full-time or part-time work) (table 6.30). Of these, 2,709,600 (87%) had retired having had worked full time at some time, 73,000 (2%) had only ever worked part time and 341,300 (11%) had never worked.

There were 2,103,900 persons aged 45 and over currently working full time and intending to retire from full time work. For both males and

females in this group, more than one-third did not know at what age they would retire (graph 6.31).

Of those who intended to retire, 35% indicated their main income source in retirement would be a superannuation funded pension or annuity, 20% responded that their main source of income would be an age, service, widow's or war widow's pension, and 20% indicated they did not know what their main source of income would be.

**6.31 EXPECTED TIME UNTIL RETIREMENT FROM FULL-TIME WORK,  
By Sex—November 1997**



Source: Retirement and Retirement Intentions, November 1997 (6238.0).

## Labour costs, wage cost index, earnings and hours of work

### Labour costs

Labour costs are those costs incurred by employers in the employment of labour. Labour costs can be split into payments for time actually worked by employees and additional labour costs incurred by employers.

Table 6.32 details selective labour costs per employee by industry for 1993–94 and 1996–97. The Mining industry continued to have the highest costs per employee (\$79,870) while Retail trade had the lowest (\$19,758).

### Award rates of pay indexes (ARPI)

The monthly ARPI ceased with the release of indexes for June 1997. Recent changes in the Australian labour market, especially the

increasing decentralisation of wage fixing arrangements, made the indexes increasingly inappropriate and unreliable as measures of change in wage rates. The award rates of pay indexes reflected only those changes in award wage rates that applied to all employees covered by awards. This means that most enterprise bargaining or individual agreements were outside the scope of the indexes, and hence wage movements in these agreements were not captured by the ARPI.

To provide a better measure of wage rate change, the ABS has developed a new statistical series, the Wage Cost Index (WCI). The WCI incorporates changes to underlying wage rates resulting from enterprise, workplace and individual employee agreements, award variations and informal arrangements. The first issue of Wage Cost Index, Australia (6345.0) was published for the December quarter 1997 (see next section).

## 6.32 LABOUR COSTS PER EMPLOYEE, By Industry

Industry	Total labour costs	Earnings	Other labour costs	Super-annuation	Payroll tax	Workers' compensation	Fringe benefits tax
	\$	\$	\$	\$	\$	\$	\$
Mining							
1993-94	66 252	56 988	9 264	3 561	3 090	1 656	956
1996-97	79 870	68 080	11 790	4 407	3 768	1 987	1 628
Manufacturing							
1993-94	36 094	31 658	4 436	1 597	1 582	1 052	204
1996-97	40 200	34 479	5 722	2 245	1 756	1 242	479
Electricity, gas and water supply							
1993-94	51 255	43 071	8 184	4 369	2 383	1 180	252
1996-97	60 056	50 926	9 130	4 234	2 814	1 493	588
Construction							
1993-94	34 414	30 184	4 230	1 925	1 057	1 059	189
1996-97	37 194	32 585	4 609	2 287	786	1 302	234
Wholesale trade							
1993-94	36 756	32 501	4 255	1 885	1 328	546	495
1996-97	41 764	36 099	5 665	2 625	1 422	766	852
Retail trade							
1993-94	19 193	17 360	1 833	747	691	314	81
1996-97	19 758	17 610	2 148	1 046	592	376	134
Accommodation, cafes and restaurants							
1993-94	18 440	16 774	1 666	801	517	290	58
1996-97	20 089	18 063	2 026	981	519	450	76
Transport and storage							
1993-94	43 504	36 606	6 898	3 607	1 587	1 198	236
1996-97	45 582	39 204	6 377	2 842	1 887	1 184	464
Communication services							
1993-94	49 105	41 913	7 192	3 927	2 443	615	207
1996-97	53 065	44 965	8 099	4 142	2 841	637	479
Finance and insurance							
1993-94	43 387	37 301	6 086	2 469	2 096	214	1 307
1996-97	51 854	44 613	7 241	2 321	2 539	254	2 127
Property and business services							
1993-94	31 872	28 564	3 308	1 877	866	272	* 293
1996-97	35 594	31 180	4 414	2 514	982	427	491
Government administration and defence							
1993-94	36 401	32 275	4 127	2 564	678	658	227
1996-97	43 126	37 421	5 706	3 943	625	822	316
Education							
1993-94	34 637	30 873	3 765	1 911	1 433	341	79
1996-97	35 139	30 493	4 645	2 748	1 344	447	106
Health and community services							
1993-94	28 682	26 360	2 323	1 561	198	541	22
1996-97	31 247	28 086	3 161	2 212	279	643	28
Cultural and recreational services							
1993-94	19 206	17 321	* 1 885	* 991	* 521	* 256	* 117
1996-97	30 469	26 925	3 544	1 809	1 059	401	275
Personal and other services							
1993-94	31 675	28 141	3 534	1 741	1 057	591	145
1996-97	35 007	30 340	4 667	2 482	1 164	813	208
All industries							
1993-94	32 259	28 530	3 729	1 800	1 104	588	237
1996-97	35 435	30 870	4 565	2 291	1 160	719	395

Source: Unpublished data, Labour Costs Survey.

## Wage Cost Index

The WCI is an integrated set of quarterly indexes measuring changes in wage and salary costs for employee jobs. Index numbers for the WCI are compiled from hourly wage and salary costs for a representative sample of employee jobs within a sample of employing organisations. Individual indexes are compiled for various combinations of State/Territory, sector (private/public), broad industry group and broad occupation group.

There are four sets of quarterly base-period weighted indexes which together comprise the WCI:

- ordinary time hourly rates of pay—excluding bonuses;
- ordinary time hourly rates of pay—including bonuses;
- total hourly rates of pay—excluding bonuses; and
- total hourly rates of pay—including bonuses.

The indexes that exclude bonuses are 'pure' price indexes (i.e. they aim to measure changes over time in the wage and salary cost of a representative 'basket' of jobs, unaffected by changes in the quality or quantity of work performed). This is referred to as 'pricing to constant quality'. By following a 'basket' of jobs over time, and by maintaining a fixed weighting pattern, these indexes will be unaffected by, for example, shifts in the distribution of employees across occupations and industries, and between full-time and part-time jobs. Thus, unlike other ABS earnings measures such as the quarterly Average Weekly Earnings series, the WCI will not measure changes in average (per employee) wage payments.

The indexes that include bonuses reflect the changes in wage and salary rates shown in the pure price indexes (described above), as well as changes in bonus payments; hence they tend to be more volatile than the pure price indexes.

Tables 6.33 and 6.34 show indexes of total hourly rates of pay excluding bonuses for the September quarter 1997 (the base quarter of the indexes), December quarter 1997 and March Quarter 1998.

Over this period:

- the index of total hourly rates of pay excluding bonuses for Australia increased by 0.8% between the September quarter 1997 and December quarter 1997, and by 0.9% between December quarter 1997 and March quarter 1998;
- by industry, the largest increase in hourly rates of pay between September quarter 1997 and March quarter 1998 was for the Construction industry (2.3%), and the smallest increase was for the Communication services industry (0.8%); and
- by occupation, the largest increase in hourly rates of pay between September quarter 1997 and March quarter 1998 was for Managers and administrators (2.1%), and the smallest increase was for Elementary clerical, sales and service workers (1.2%).

More detailed information on the WCI is available in *Information Paper: Wage Cost Index, Australia* (6346.0).

**6.33 TOTAL HOURLY RATES OF PAY EXCLUDING BONUSES, By Industry**

Industry	Quarterly index numbers			Percentage change from previous quarter	
	September quarter 1997	December quarter 1997	March quarter 1998	December quarter 1997	March quarter 1998
Mining	100.0	100.7	101.4	0.7	0.7
Manufacturing	100.0	101.0	102.2	1.0	1.2
Electricity, gas and water supply	100.0	101.2	102.2	1.2	1.0
Construction	100.0	101.0	102.3	1.0	1.3
Wholesale trade	100.0	100.3	101.2	0.3	0.9
Retail trade	100.0	100.9	101.3	0.9	0.4
Accommodation, cafes and restaurants	100.0	100.7	101.7	0.7	1.0
Transport and storage	100.0	100.8	101.5	0.8	0.7
Communication services	100.0	100.7	100.8	0.7	0.1
Finance and insurance	100.0	101.0	102.2	1.0	1.2
Property and business services	100.0	100.7	101.8	0.7	1.1
Government administration and defence	100.0	100.4	101.3	0.4	0.9
Education	100.0	100.7	101.7	0.7	1.0
Health and community services	100.0	101.0	101.7	1.0	0.7
Cultural and recreational services	100.0	100.5	101.2	0.5	0.7
Personal and other services	100.0	100.4	101.4	0.4	1.0
<b>All industries</b>	<b>100.0</b>	<b>100.8</b>	<b>101.7</b>	<b>0.8</b>	<b>0.9</b>

Source: Wage Cost Index, Australia, March quarter 1998 (6345.0).

**6.34 TOTAL HOURLY RATES OF PAY EXCLUDING BONUSES, By Occupation**

Occupation	Quarterly index numbers			Percentage change from previous quarter	
	September quarter 1997	December quarter 1997	March quarter 1998	December quarter 1997	March quarter 1998
Managers and administrators	100.0	101.1	102.1	1.1	1.0
Professionals	100.0	100.8	101.8	0.8	1.0
Associate professionals	100.0	100.9	101.8	0.9	0.9
Tradespersons and related workers	100.0	100.8	101.9	0.8	1.1
Advanced clerical and service workers	100.0	100.8	101.6	0.8	0.8
Intermediate clerical, sales and service workers	100.0	100.7	101.5	0.7	0.8
Intermediate production and transport workers	100.0	100.7	101.6	0.7	0.9
Elementary clerical, sales and service workers	100.0	100.8	101.2	0.8	0.4
Labourers and related workers	100.0	100.9	101.9	0.9	1.0
<b>All occupations</b>	<b>100.0</b>	<b>100.8</b>	<b>101.7</b>	<b>0.8</b>	<b>0.9</b>

Source: Wage Cost Index, Australia, March quarter 1998 (6345.0).

**Average weekly earnings**

Weekly total earnings include award, over-award, workplace and enterprise bargaining payments, and overtime pay. Weekly ordinary time earnings relate only to that part of total earnings attributable to award, standard or agreed hours of work.

Table 6.35 shows the average weekly ordinary time earnings (AWOTE) of both male and female wage and salary earners over the five years from May 1993 to May 1998. For males, the AWOTE increased by 22.2% (an average annual increase of 4.4%) from \$632.90 to \$773.20 over this period, and for females by 21.4% (an average annual increase of 4.3%) from \$533.00 to \$646.90.

**6.35 AVERAGE WEEKLY EARNINGS**

	May 1993	May 1994	May 1995	May 1996	May 1997	May 1998
	\$	\$	\$	\$	\$	\$
<b>MALES</b>						
Full-time adult employees						
Average weekly ordinary time earnings	632.90	654.00	687.80	715.80	740.70	773.20
Average weekly total earnings	679.60	705.90	743.00	774.20	795.80	829.90
All male employees						
Average weekly total earnings	612.50	625.10	652.70	671.50	687.10	714.50
<b>FEMALES</b>						
Full-time adult employees						
Average weekly ordinary time earnings	533.00	552.10	575.50	594.10	620.30	646.90
Average weekly total earnings	545.60	566.70	589.80	607.90	634.80	660.60
All female employees						
Average weekly total earnings	406.30	422.80	429.90	441.10	457.40	468.30
<b>PERSONS</b>						
Full-time adult employees						
Average weekly ordinary time earnings	597.80	617.50	647.30	672.60	696.60	726.90
Average weekly total earnings	632.60	656.10	687.80	715.20	736.80	767.80
All employees						
Average weekly total earnings	517.50	531.80	548.10	564.40	577.80	596.20

Source: *Average Weekly Earnings, States and Australia* (6302.0).

## Composition and distribution of earnings

Statistics on the composition and distribution of average weekly earnings and hours, for various categories of employees by occupation groups, industries and sectors, provide an additional perspective on earnings.

Table 6.36 shows the distribution of average weekly total earnings across different occupations and categories of employees in May 1996. Average weekly total earnings vary considerably across occupations and between males and females, with earnings generally reflecting associated skill levels. In May 1996, full-time adult male Managers and administrators received estimated average weekly total earnings of \$1,162.30, while their female counterparts averaged \$987.80. At the lower levels of total earnings ranges, full-time adult male Labourers and related workers earned on average \$582.40, compared to \$489.20 for females in the same occupation.

Part-time employees in Elementary clerical, sales and service worker occupations received estimated average total earnings of \$184.10 per

week in May 1996, well below the average earnings for part-time employees in all occupations (\$253.10).

For table 6.37, the distribution of weekly total earnings of the major occupation groups was arranged into percentiles (100 population groups having equal frequencies). The table shows the weekly total earnings of a selection of progressively higher percentiles, for the major occupation groups. The widest disparity in weekly total earnings between the 10th and 90th percentiles is in male Managers and administrators. The narrowest disparity is in female Elementary clerical, sales and service workers. The table shows that the disparity between male and female weekly total earnings is generally greater for the higher percentiles than for the lower percentiles.

Table 6.38 presents the composition of average weekly earnings, between ordinary and overtime earnings, for full-time adult employees by industry. Significant amounts of weekly overtime earnings were recorded for full-time adult employees in Mining (\$111.20), Transport and storage (\$80.60), Manufacturing (\$80.20) and Construction (\$77.90).

**6.36 AVERAGE WEEKLY TOTAL EARNINGS, Occupation(a) by Category of Employee—May 1996**

Occupation	Full-time employees							
	Managerial	Non-managerial			Total		Part-time employees	All employees
	Adult	Adult	Junior	Total	Adult	Total		
	\$	\$	\$	\$	\$	\$	\$	\$
<b>MALES</b>								
Managers and administrators	1 170.20	958.50	. .	958.50	1 162.30	1 162.30	469.40	1 150.20
Professionals	1 047.20	908.80	417.20	906.70	933.30	931.50	389.40	860.00
Associate professionals	764.30	809.90	315.80	806.60	792.20	790.30	221.80	759.50
Tradespersons and related workers	503.40	711.80	323.00	657.10	699.30	649.10	283.00	631.30
Advanced clerical and service workers	581.80	720.10	407.20	716.20	710.80	707.40	245.60	656.30
Intermediate clerical, sales and service workers	697.30	647.90	348.30	640.90	649.80	642.90	221.90	564.50
Intermediate production and transport workers	485.70	721.10	349.30	712.50	716.10	707.70	230.00	635.60
Elementary clerical, sales and service workers	521.30	613.90	315.70	594.30	613.10	593.70	167.50	385.80
Labourers and related workers	505.50	583.10	264.60	569.60	582.40	569.10	195.90	464.40
<i>All occupations</i>	979.90	729.70	322.40	708.70	780.60	761.50	234.30	684.30
<b>FEMALES</b>								
Managers and administrators	995.60	842.00	. .	842.00	987.80	987.80	428.90	924.00
Professionals	791.00	774.00	289.40	773.80	774.90	774.80	396.70	624.90
Associate professionals	592.80	636.00	348.30	627.20	618.80	613.70	333.30	544.10
Tradespersons and related workers	432.60	519.90	309.80	456.10	510.80	454.40	255.60	367.50
Advanced clerical and service workers	491.10	591.80	328.90	583.90	581.50	574.70	264.50	475.70
Intermediate clerical, sales and service workers	465.70	543.00	317.60	527.70	541.10	526.30	247.60	401.00
Intermediate production and transport workers	361.30	516.60	375.00	512.30	515.80	511.50	212.50	371.50
Elementary clerical, sales and service workers	378.40	504.60	311.90	471.00	503.40	470.30	190.40	276.50
Labourers and related workers	n.p.	489.20	271.90	481.70	489.20	481.70	204.70	307.90
<i>All occupations</i>	729.20	605.70	315.80	588.60	620.90	604.90	260.00	447.20
<b>PERSONS</b>								
Managers and administrators	1 137.80	930.60	. .	930.60	1 129.60	1 129.60	444.00	1 104.10
Professionals	994.30	843.80	407.00	842.80	862.40	861.50	395.10	733.60
Associate professionals	708.90	755.10	338.20	749.10	737.00	733.50	303.50	679.00
Tradespersons and related workers	496.50	701.00	321.20	643.30	688.20	635.50	268.30	601.50
Advanced clerical and service workers	503.70	618.10	336.20	610.60	607.20	600.70	263.40	504.10
Intermediate clerical, sales and service workers	582.20	584.20	323.00	570.90	584.10	571.20	243.80	449.60
Intermediate production and transport workers	482.30	699.60	352.80	691.30	695.40	687.30	223.60	594.30
Elementary clerical, sales and service workers	443.20	559.10	312.90	528.70	558.00	528.00	184.10	314.30
Labourers and related workers	505.50	557.10	266.30	545.40	556.80	545.20	201.40	398.50
<b>All occupations</b>	<b>917.50</b>	<b>683.00</b>	<b>319.70</b>	<b>663.10</b>	<b>723.90</b>	<b>705.60</b>	<b>253.10</b>	<b>573.70</b>

(a) Occupation classified according to the Australian Standard Classification of Occupations (Second Edition).

Source: *Employee Earnings and Hours, Australia* (6306.0).

**6.37 WEEKLY TOTAL EARNINGS(a), Selected Percentiles by Occupation(b)—May 1996**

Occupation	10th percentile \$	25th percentile \$	50th percentile(c) \$	75th percentile \$	90th percentile \$	Average (mean) earnings \$
<b>MALES</b>						
Managers and administrators	673.00	851.00	1 040.00	1 299.20	1 776.20	1 162.300
Professionals	570.70	713.80	843.80	1 034.20	1 354.90	933.30
Associate professionals	461.60	603.00	756.00	926.30	1 153.80	792.20
Tradespersons and related workers	432.30	517.20	629.90	816.60	1 056.10	699.30
Advanced clerical and service workers	445.70	573.40	690.90	806.30	987.10	710.80
Intermediate clerical, sales and service workers	457.20	518.50	619.40	740.70	885.20	649.80
Intermediate production and transport workers	438.20	502.00	634.80	844.50	1 111.40	716.10
Elementary clerical, sales and service workers	420.50	473.50	581.10	695.10	868.60	613.10
Labourers and related workers	385.60	445.80	524.80	668.90	860.90	582.40
<i>All occupations</i>	<i>447.80</i>	<i>538.70</i>	<i>701.30</i>	<i>915.40</i>	<i>1 194.30</i>	<i>780.60</i>
<b>FEMALES</b>						
Managers and administrators	605.90	761.60	962.40	1 146.60	1 408.50	987.80
Professionals	544.30	647.80	770.20	853.00	977.10	774.90
Associate professionals	399.10	500.50	596.70	728.10	867.40	618.80
Tradespersons and related workers	368.20	426.10	470.30	580.30	725.90	510.80
Advanced clerical and service workers	415.60	489.30	573.50	671.40	757.20	581.50
Intermediate clerical, sales and service workers	407.40	458.90	521.90	607.00	703.60	541.10
Intermediate production and transport workers	380.10	408.90	462.50	569.70	712.70	515.80
Elementary clerical, sales and service workers	386.30	421.80	468.60	553.60	678.40	503.40
Labourers and related workers	359.40	403.00	464.90	553.40	666.30	489.20
<i>All occupations</i>	<i>408.20</i>	<i>471.90</i>	<i>576.80</i>	<i>734.50</i>	<i>880.70</i>	<i>620.90</i>
<b>PERSONS</b>						
Managers and administrators	650.50	828.70	1 028.20	1 267.10	1 723.10	1 129.60
Professionals	555.20	677.80	813.60	944.50	1 193.50	862.40
Associate professionals	422.10	545.30	700.60	867.70	1 075.00	737.00
Tradespersons and related workers	426.70	506.40	620.10	802.60	1 038.40	688.20
Advanced clerical and service workers	424.50	498.00	588.30	695.50	808.70	607.20
Intermediate clerical, sales and service workers	423.70	479.10	552.80	658.80	787.30	584.10
Intermediate production and transport workers	420.50	488.00	606.80	822.00	1 090.80	695.40
Elementary clerical, sales and service workers	400.90	440.40	509.10	631.60	769.30	558.00
Labourers and related workers	375.90	428.80	506.70	635.40	822.70	556.80
<b>All occupations</b>	<b>427.10</b>	<b>507.00</b>	<b>649.60</b>	<b>844.20</b>	<b>1 090.20</b>	<b>723.90</b>

(a) For full-time adult employees. (b) Occupation classified according to the Australian Standard Classification of Occupations (Second Edition). (c) The median percentile.

Source: *Employee Earnings and Hours, Australia* (6306.0).



**6.38 AVERAGE WEEKLY EARNINGS(a), Composition—May 1996**

	Ordinary earnings	Overtime earnings	Total earnings
Industry	\$	\$	\$
Mining	1 060.50	111.20	1 171.70
Manufacturing	630.40	80.20	710.60
Electricity, gas and water supply	738.90	71.80	810.80
Construction	649.80	77.90	727.70
Wholesale trade	643.30	25.20	668.60
Retail trade	551.90	19.60	571.50
Accommodation, cafes and restaurants	555.60	11.60	567.30
Transport and storage	690.40	80.60	771.00
Communication services	708.90	73.60	782.40
Finance and insurance	789.60	15.00	804.50
Property and business services	723.80	22.10	745.80
Government administration and defence	717.80	20.40	738.30
Education	770.30	*4.40	774.70
Health and community services	700.80	22.00	722.80
Cultural and recreational services	663.70	18.30	682.10
Personal and other services	659.00	37.10	696.10
<b>All industries</b>	<b>683.20</b>	<b>40.80</b>	<b>723.90</b>

(a) For full-time adult employees.

Source: *Employee Earnings and Hours, Australia* (6306.0).

### Standard non-wage benefits

In addition to wages and salaries, the majority of employees also receive leave (sick, holiday and long-service) and superannuation benefits. By their nature, it is difficult to collect data on the value of most non-wage benefits. The statistics presented in this section therefore relate to the incidence of standard non-wage benefits, and not to their value.

In August 1997, 98% of the 5,055,800 full-time employees received one or more of the 'standard' employment benefits of superannuation, sick leave, holiday leave or long-service leave in their main job. In comparison, 73% of the 1,916,400 part-time employees received one or more 'standard' employment benefits.

Table 6.39 shows the proportion of employees receiving each of the 'standard' employment benefits. The proportion receiving a superannuation benefit (i.e. belonging to a

superannuation scheme or a fund arranged by their employer) has increased steadily in recent years. The proportion rose from 73% in 1990 to 95% in 1997 for full-time employees and from 31% in 1990 to 70% in 1997 for part-time employees. For full-time employees, the proportion receiving holiday and sick leave has fallen between 1990 and 1997, while for part-time employees the proportion receiving these benefits has risen slightly.

Public sector employees had a higher incidence of receipt of standard benefits than private sector employees. Of the 1,542,200 public sector employees, 95% received superannuation, 87% received holiday leave, 88% received sick leave and 85% received long-service leave. In comparison, the proportions of the 5,430,000 private sector employees receiving standard benefits were: superannuation (86%), holiday leave (69%), sick leave (68%), and long-service leave (57%) (based on table 6.40).

**6.39 EMPLOYEES IN MAIN JOB(a), By Type of Standard Benefit Received**

Type of benefit	Working full-time		Working part-time		Total employees	
	August 1990	August 1997	August 1990	August 1997	August 1990	August 1997
	%	%	%	%	%	%
Superannuation	72.7	95.1	30.7	70.1	51.6	88.2
Holiday leave	93.0	88.3	29.7	32.2	79.4	72.9
Sick leave	92.3	88.1	30.1	32.7	78.9	72.9
Long-service leave	78.1	76.2	23.0	27.9	66.2	62.9

Source: *Weekly Earnings of Employees (Distribution), Australia (6310.0)*.

**6.40 EMPLOYEES, By Selected Characteristics and Standard Benefits—August 1997**

	Type of standard benefit received						
	No standard benefits received	Superannuation	Holiday leave	Sick leave	Long-service leave	Total(a)	Received a benefit
	'000	'000	'000	'000	'000	'000	%
Full-time and part-time employees							
Full-time	123.9	4 807.4	4 462.8	4 453.2	3 853.0	5 055.8	97.5
Part-time	515.3	1 342.6	617.5	627.2	535.4	1 916.4	73.1
Permanent or casual employees							
Permanent	..	5 006.6	5 080.3	5 080.4	4 251.4	5 176.6	100.0
Casual	639.3	1 143.4	..	..	137.1	1 795.5	64.4
Sector							
Public	49.1	1 471.1	1 346.8	1 361.8	1 316.0	1 542.2	96.8
Private	590.2	4 678.9	3 733.5	3 718.6	3 072.4	5 430.0	89.1
<b>Total</b>	<b>639.3</b>	<b>6 150.0</b>	<b>5 080.3</b>	<b>5 080.4</b>	<b>4 388.4</b>	<b>6 972.1</b>	<b>90.8</b>

(a) Includes persons receiving more than one standard benefit.

Source: *Weekly Earnings of Employees (Distribution), Australia (6310.0)*.

**Superannuation**

In August 1997, 88% of employees received superannuation as an employment benefit in their main job (table 6.41). The proportion of males who received superannuation increased from 87% in August 1993 to 89% in August 1997. In comparison, the proportion of females receiving superannuation as an employment benefit increased from 82% in August 1993 to 87% in August 1997.

**6.41 EMPLOYEES WHO RECEIVED SUPERANNUATION BENEFITS, As at August**

	Males	Females	Persons
	%	%	%
1993	87.4	81.8	84.9
1994	89.4	84.6	87.3
1995	89.2	84.4	87.0
1996	88.0	84.3	86.4
1997	89.3	86.8	88.2

(a) Based on a supplement to the monthly Labour Force Survey in August of each year.

Source: *Weekly Earnings of Employees (Distribution), Australia (6310.0)*.

The majority (93%) of employees aged 20 years and over received superannuation as an employment benefit in August 1997. In contrast, just over half (54%) of employees aged 15–19 years were covered by superannuation. The proportions of employees covered by superannuation benefits, by age group, were: 88% of employees aged 20–24; 94% of 25–34 year olds; 95% of 35–44 year olds; 95% of 45–54 year olds and 94% of 55–59 year olds. Of employees aged 60 and over, 81% had superannuation coverage.

In August 1997, 95% of employees in the public sector received superannuation benefits (97% of males and 94% of females) compared with 86% of private sector employees (88% of males and 84% of females).

Some 95% of full-time employees received superannuation as an employment benefit in August 1997, increasing from 92% in August 1993. Over the same time period superannuation coverage of part-time employees showed stronger growth, increasing from 61% in August 1993 to 70% in August 1997.

The Electricity, gas and water supply industry recorded the highest proportion of employees who received superannuation benefits in their main job in August 1997 (99%). Finance and insurance (97%), Mining (97%) and Government administration and defence (96%) also recorded higher than average proportions of coverage. In contrast, Retail trade (75%), Accommodation, cafes and restaurants (76%), and Agriculture, forestry and fishing (78%) recorded the lowest proportions of employees who received superannuation benefits (table 6.42).

Table 6.43 shows the estimates by industry of the total cost and the cost per employee of employer funded superannuation in Australia for the years 1993–94 and 1996–97.

The total cost of employer superannuation contributions increased from \$11,295m in 1993–94 to \$15,949m in 1996–97, while the cost per employee increased from \$1,800 in 1993–94 to \$2,291 in 1996–97.

**6.42 PROPORTION OF EMPLOYEES WHO RECEIVED SUPERANNUATION BENEFITS—August 1997**

Industry	Full-time %	Part-time %	Total %
<b>MALES</b>			
Agriculture, forestry and fishing	86.9	53.4	81.2
Mining	97.5	100.0	97.6
Manufacturing	96.1	62.8	94.4
Electricity, gas and water supply	99.7	100.0	99.7
Construction	90.9	49.9	88.1
Wholesale trade	94.6	54.4	91.9
Retail trade	93.4	42.0	75.6
Accommodation, cafes and restaurants	90.6	56.4	77.5
Transport and storage	94.7	60.7	91.7
Communication services	95.3	61.1	93.6
Finance and insurance	97.9	63.2	96.4
Property and business services	92.9	54.6	87.9
Government administration and defence	98.9	60.3	97.4
Education	97.6	69.4	92.9
Health and community services	95.5	67.6	91.1
Cultural and recreational services	95.5	58.1	85.3
Personal and other services	95.7	49.5	90.5
<b>All industries</b>	<b>94.7</b>	<b>53.4</b>	<b>89.3</b>
<b>FEMALES</b>			
Agriculture, forestry and fishing	83.9	58.6	70.0
Mining	93.4	100.0	94.8
Manufacturing	95.2	75.0	89.8
Electricity, gas and water supply	95.7	100.0	96.2
Construction	91.3	85.1	88.6
Wholesale trade	95.6	83.6	92.0
Retail trade	95.0	63.9	74.0
Accommodation, cafes and restaurants	87.3	68.3	74.7
Transport and storage	96.6	79.0	92.8
Communication services	96.7	87.3	94.9
Finance and insurance	99.0	95.9	98.1
Property and business services	94.5	75.3	87.7
Government administration and defence	97.7	82.3	93.9
Education	98.1	81.4	91.2
Health and community services	97.3	89.8	93.4
Cultural and recreational services	94.9	71.6	83.1
Personal and other services	92.0	60.9	79.0
<b>All industries</b>	<b>95.7</b>	<b>76.0</b>	<b>86.8</b>
<b>PERSONS</b>			
Agriculture, forestry and fishing	86.4	56.2	78.3
Mining	97.2	100.0	97.3
Manufacturing	95.9	70.4	93.3
Electricity, gas and water supply	99.2	100.0	99.3
Construction	90.9	65.7	88.2
Wholesale trade	94.8	73.7	91.9
Retail trade	94.0	57.1	74.8
Accommodation, cafes and restaurants	89.3	64.6	75.9
Transport and storage	95.1	68.6	92.0
Communication services	95.7	78.5	94.0
Finance and insurance	98.5	92.5	97.4
Property and business services	93.5	69.0	87.8
Government administration and defence	98.4	78.8	95.8
Education	97.9	79.5	91.7
Health and community services	96.7	88.1	92.9
Cultural and recreational services	95.3	67.0	84.2
Personal and other services	94.4	58.3	85.1
<b>All industries</b>	<b>95.1</b>	<b>70.1</b>	<b>88.2</b>

Source: Unpublished data, Weekly Earnings of Employees (Distribution).

**6.43 SUPERANNUATION, Costs to Employers**

Industry	Total cost		Cost per employee	
	1993–94	1996–97	1993–94	1996–97
	\$m	\$m	\$	\$
Mining	232.1	352.1	3 561.0	4 407.0
Manufacturing	1 488.2	2 184.5	1 597.0	2 245.0
Electricity, gas and water supply	395.9	265.4	4 369.0	4 234.0
Construction	522.2	797.8	1 925.0	2 287.0
Wholesale trade	785.2	1 260.6	1 885.0	2 625.0
Retail trade	658.0	1 069.9	747.0	1 046.0
Accommodation, cafes and restaurants	274.1	376.1	801.0	981.0
Transport and storage	968.2	872.8	3 607.0	2 842.0
Communication services	453.2	533.1	3 927.0	4 142.0
Finance and insurance	731.2	627.7	2 469.0	2 321.0
Property and business services	1 210.5	1 923.2	1 877.0	2 514.0
Government administration and defence	1 053.2	1 428.1	2 564.0	3 943.0
Education	933.4	1 685.2	1 911.0	2 748.0
Health and community services	1 008.9	1 602.3	1 561.0	2 212.0
Cultural and recreational services	163.4	314.8	* 991.0	1 809.0
Personal and other services	417.3	654.9	1 741.0	2 482.0
<b>All industries</b>	<b>11 295.0</b>	<b>15 948.6</b>	<b>1 800.0</b>	<b>2 291.0</b>

Source: *Labour Costs, Australia* (6348.0).

**Hours of work and work patterns**

Statistics on hours and patterns of work are essential for the study of economic activity, productivity, working conditions, living standards and the quality of life of working people. In this section, a range of data has been brought together on work patterns and hours of work.

The average weekly hours worked in 1997–98 by various categories of employed persons, and in different industries, are shown in tables 6.44 and 6.45.

**6.44 EMPLOYED PERSONS, Aggregate and Average Weekly Hours Worked(a), Annual Average(b)—1997–98**

	Unit	Males	Married	Females		Persons
				Not married	Total	
Aggregate weekly hours worked by						
All workers	mill. hours	195.1	65.0	42.4	107.4	<b>302.5</b>
Full-time workers	mill. hours	186.2	47.4	34.2	81.6	<b>267.7</b>
Part-time workers	mill. hours	9.0	17.6	8.2	25.8	<b>34.8</b>
Average weekly hours worked by						
All workers	hours	40.6	29.2	29.5	29.3	<b>35.7</b>
Full-time workers	hours	44.1	39.7	39.1	39.4	<b>42.5</b>
Part-time workers	hours	15.5	17.0	14.6	16.2	<b>16.0</b>
Employees	hours	39.6	29.1	29.4	29.2	<b>35.0</b>
Other than employees	hours	45.4	29.6	31.4	30.0	<b>40.1</b>
All workers who worked one hour or more in the reference week	hours	42.5	30.8	30.9	30.9	<b>37.5</b>
Full-time workers who worked one hour or more in the reference week	hours	46.0	41.9	40.9	41.5	<b>44.6</b>
Part-time workers who worked one hour or more in the reference week	hours	16.3	18.0	15.3	17.1	<b>16.9</b>

(a) The estimates refer to actual hours worked, not hours paid for. (b) Averages calculated on quarterly estimates.

Source: *Unpublished data, Labour Force Survey*.

### 6.45 EMPLOYED PERSONS, Average Weekly Hours Worked(a) by Industry(b), Annual Average(c)—1997–98

Industry	Males	Females		Persons
		Married	Total	
hours	hours	hours	hours	hours
Agriculture, forestry and fishing	49.3	30.5	30.7	43.7
Mining	44.3	37.0	39.1	43.7
Manufacturing	40.7	31.7	32.5	38.5
Electricity, gas and water supply	38.1	31.9	32.9	37.4
Construction	41.6	19.6	22.2	39.0
Wholesale trade	41.9	30.3	31.7	38.8
Retail trade	37.3	29.5	25.4	31.2
Accommodation, cafes and restaurants	38.0	29.9	27.6	32.3
Transport and storage	42.7	28.7	31.3	40.1
Communication services	38.9	29.8	30.7	36.2
Finance and insurance	41.6	30.0	32.1	36.3
Property and business services	41.6	29.2	31.2	37.1
Government administration and defence	37.1	30.3	31.4	34.5
Education	38.7	30.6	31.6	34.0
Health and community services	38.3	27.2	28.4	30.6
Cultural and recreational services	35.2	27.7	27.5	31.6
Personal and other services	38.4	28.6	28.8	33.8
<b>All industries</b>	<b>40.6</b>	<b>29.2</b>	<b>29.3</b>	<b>35.7</b>

(a) The estimates refer to actual hours worked, not hours paid for. (b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC). (c) Averages calculated on quarterly estimates.

Source: Unpublished data, Labour Force Survey.

## Working arrangements

In August 1997, some 63% (4.3 million) of all employees had little flexibility as to when they started and finished work, as their start and finish times were fixed. Of these employees, 3.3 million had no say in setting these fixed times (table 6.46).

An estimated 2.5 million employees did not have fixed start and finish times, and 1.6 million of these had the flexibility of being able to choose their start and finish times on a day-to-day basis. More male employees had this flexibility than female employees (25% and 20%, respectively).

### 6.46 ALL EMPLOYEES, Working Arrangements—August 1997

	Permanent			Casual			Total		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
	'000	'000	'000	'000	'000	'000	'000	'000	'000
Start and finish times not fixed									
Daily variation is available	732.2	415.4	1 147.6	218.9	193.6	412.5	951.1	609.0	1 560.1
Daily variation is not available	407.8	214.8	622.6	149.9	180.4	330.3	557.7	395.2	952.9
Total	1 140.0	630.2	1 770.2	368.8	374.0	742.8	1 508.8	1 004.2	2 513.0
Start and finish times are fixed									
Times were negotiated with employer	354.8	359.3	714.0	81.0	143.7	224.7	435.8	503.0	938.8
Times were not negotiated with employer	1 537.3	1 145.0	2 682.3	272.0	377.6	649.6	1 809.2	1 522.6	3 331.9
Total	1 892.1	1 504.3	3 396.3	353.0	521.4	874.3	2 245.0	2 025.6	4 270.6
<b>Total</b>	<b>3 032.0</b>	<b>2 134.5</b>	<b>5 166.5</b>	<b>721.8</b>	<b>895.3</b>	<b>1 617.1</b>	<b>3 753.8</b>	<b>3 029.8</b>	<b>6 783.6</b>

Source: Working Arrangements, Australia (6342.0).

Rostered days off were a feature of the working conditions for 23% of employees (1.6 million). Industries with the highest proportions of employees entitled to rostered days off were Electricity, gas and water supply (67%), Communication services (44%) and Transport and storage (35%). Those with the lowest were Education (8%), Property and business services (9%) and Wholesale trade (13%).

Of the 5.1 million full-time employees, 41% worked overtime on a regular basis, with a higher proportion of males working overtime

regularly (44%) than females (35%) (based on table 6.47). A lower proportion of part-time employees worked overtime regularly (10% of males and 12% of females).

In August 1997, some 981,900 employees had worked shift work in the previous four weeks (table 6.47). This represented 14% of employees (15% of males and 13% of females).

Of the 578,700 male shift workers, 497,600 (86%) were full-time employees. Of the 403,200 female shift workers, 197,000 (49%) were full-time employees.

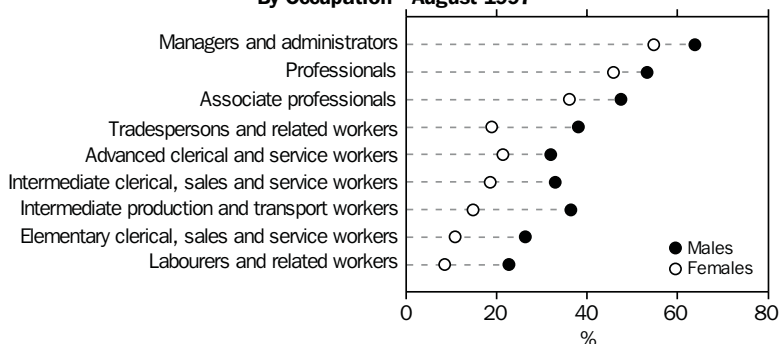
**6.47 OVERTIME AND SHIFT WORK—August 1997**

	Permanent			Casual			Total		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
	'000	'000	'000	'000	'000	'000	'000	'000	'000
<b>FULL-TIME EMPLOYEES IN MAIN JOB</b>									
Whether overtime is worked on a regular basis									
Overtime is worked on a regular basis	1 347.5	574.5	1 921.9	125.4	36.4	161.9	1 472.9	610.9	2 083.8
Overtime is not worked on a regular basis	59.2	26.8	85.9	9.9	*2.7	12.5	69.0	29.4	98.5
Overtime is not worked	1 543.8	965.7	2 509.5	248.1	115.6	363.7	1 791.8	1 081.4	2 873.2
Whether worked shift work in the last four weeks									
Worked shift work in the last four weeks	464.4	179.3	643.7	33.2	17.7	50.9	497.6	197.0	694.6
Did not work shift work in the last four weeks	2 471.5	1 369.4	3 840.9	350.2	137.0	487.2	2 821.7	1 506.4	4 328.1
Away from work for four weeks or more	14.5	18.2	32.7	*0.0	*0.0	*0.0	14.5	18.2	32.7
<b>Total</b>	<b>2 950.4</b>	<b>1 567.0</b>	<b>4 517.4</b>	<b>383.4</b>	<b>154.7</b>	<b>538.1</b>	<b>3 333.8</b>	<b>1 721.7</b>	<b>5 055.5</b>
<b>PART-TIME EMPLOYEES IN MAIN JOB</b>									
Whether overtime is worked on a regular basis									
Overtime is worked on a regular basis	16.0	104.7	120.7	24.6	52.3	76.9	40.6	157.0	197.6
Overtime is not worked on a regular basis	*2.0	12.8	14.8	*3.3	7.5	10.9	5.3	20.4	25.7
Overtime is not worked	63.6	450.0	513.6	310.6	680.8	991.3	374.2	1 130.7	1 504.9
Whether worked shift work in the last four weeks									
Worked shift work in the last four weeks	20.7	106.5	127.3	60.4	99.6	160.0	81.1	206.2	287.3
Did not work shift work in the last four weeks	60.8	456.6	517.4	277.9	640.4	918.2	338.6	1 097.0	1 435.6
Away from work for four weeks or more	*0.1	*4.4	*4.5	*0.2	*0.6	*0.8	*0.3	*5.0	5.3
<b>Total</b>	<b>81.6</b>	<b>567.5</b>	<b>649.1</b>	<b>338.5</b>	<b>740.6</b>	<b>1 079.0</b>	<b>420.1</b>	<b>1 308.1</b>	<b>1 728.2</b>
<b>TOTAL</b>									
Whether overtime is worked on a regular basis									
Overtime is worked on a regular basis	1 363.5	679.2	2 042.7	150.0	88.7	238.7	1 513.5	767.9	2 281.4
Overtime is not worked on a regular basis	61.2	39.6	100.8	13.2	10.2	23.4	74.3	49.8	124.1
Overtime is not worked	1 607.4	1 415.7	3 023.1	558.6	796.4	1 355.0	2 166.0	2 212.1	4 378.1
Whether worked shift work in the last four weeks									
Worked shift work in the last four weeks	485.1	285.8	771.0	93.6	117.4	211.0	578.7	403.2	981.9
Did not work shift work in the last four weeks	2 532.3	1 826.0	4 358.3	628.0	777.4	1 405.4	3 160.3	2 603.4	5 763.7
Away from work for four weeks or more	14.6	22.6	37.3	*0.2	*0.6	*0.8	14.8	23.2	38.0
<b>Total</b>	<b>3 032.0</b>	<b>2 134.5</b>	<b>5 166.5</b>	<b>721.8</b>	<b>895.3</b>	<b>1 617.1</b>	<b>3 753.8</b>	<b>3 029.8</b>	<b>6 783.6</b>

Source: Working Arrangements, Australia (6342.0).



**6.48 EMPLOYEES WHO USUALLY WORK OVERTIME IN MAIN JOB,  
By Occupation—August 1997**



Source: *Working Arrangements, Australia* (6342.0).

As shown in graph 6.48, occupations in which the highest proportions of employees usually worked overtime were Managers and administrators (64% of males and 55% of females) and Professionals (53% of males and 46% of females), while those with the lowest were Elementary clerical, sales and service workers (26% of males and 11% of females) and Labourers and related workers (23% of males and 9% of females).

## Industrial relations

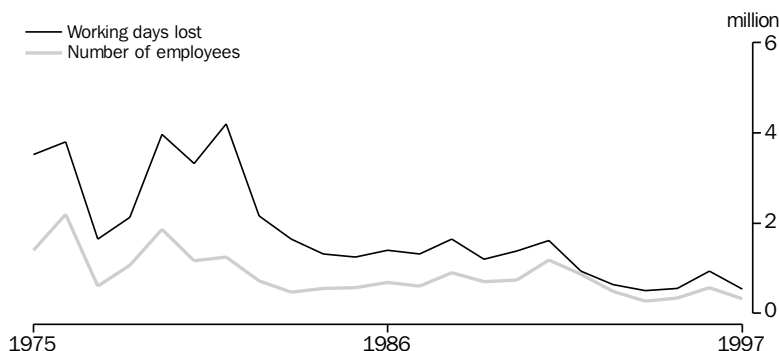
### Industrial disputes

This section presents statistics of industrial disputes involving the loss of ten working days or more at the establishments where stoppages occurred. Working days lost refer to working days lost by workers directly or indirectly

involved in disputes at those establishments. The statistics in the following tables and graphs relate to industrial disputes which occurred in each year, irrespective of the year in which they may have started or ended.

The number of working days lost per year, and the number of employees involved, have fluctuated from year to year, but have trended downwards significantly over the last two decades or so (graph 6.49). In 1970 there were 6.3 million working days lost, which had reduced to just over 0.5 million in 1997. In that year, 447 industrial disputes were reported, involving 315,400 employees (table 6.50). There was a 42% reduction in the number of working days lost between 1996 and 1997. The number of employees involved dropped by 45%, and the number of disputes by 18%.

**6.49 INDUSTRIAL DISPUTES**



Source: *Industrial Disputes, Australia* (6321.0).

**6.50 INDUSTRIAL DISPUTES, Number of Disputes and Employees Involved**

Year	Disputes(a)		Employees involved		
	Commenced in year no.	Total(a) no.	Newly involved(b) '000	Total(a) '000	Working days lost '000
1992	726.0	728.0	871.3	871.5	941.2
1993	607.0	610.0	489.2	489.6	635.8
1994	556.0	560.0	263.4	265.1	501.6
1995	635.0	643.0	335.4	344.3	547.6
1996	539.0	543.0	575.9	577.7	928.5
1997	444.0	447.0	315.0	315.4	534.2

(a) Prior to September 1991 disputes affecting more than one industry and/or State have been counted as separate disputes in each industry and State and in the Australian total. (b) Comprises workers involved in disputes which commenced during the year and additional workers involved in disputes which continued from the previous year.

Source: *Industrial Disputes, Australia* (6322.0).

In 1997, the largest contributor to the total number of working days lost was the Construction industry (107,800), accounting for 20% of all working days lost, followed closely by Coal mining (18%) and Education; Health and community services (also 18%). Compared with 1996, the largest percentage reductions in the number of working days lost in 1997 were reported by Other mining (75%), Construction (68%) and Education; Health and community services (61%). These reductions were partly offset by increases of 134% in the number of

working days lost by the industry grouping which includes Transport and storage; and Communications services.

Working days lost per thousand employees decreased from 131 in 1996 to 75 in 1997 (table 6.52), a drop of 43%. This reduction was largely due to a 67% drop by the Construction industry. The Coal mining industry continued to report the highest number of working days lost per thousand employees (4,206 in 1997), although this represented a drop of 41% when compared with 1996.

**6.51 INDUSTRIAL DISPUTES, Working Days Lost by Industry**

Industry(a)	1992 '000	1993 '000	1994 '000	1995 '000	1996 '000	1997 '000
Mining						
Coal	76.8	78.6	151.0	111.1	160.8	95.7
Other	50.8	14.4	18.3	78.0	4.4	1.1
Manufacturing						
Metal products; Machinery and equipment	121.4	160.4	45.4	54.8	58.6	76.9
Other	154.6	77.7	78.3	105.1	44.8	68.7
Construction	38.4	13.1	20.2	42.7	334.8	107.8
Transport and storage; Communication services	82.4	15.6	59.4	38.6	20.4	47.7
Education; Health and community services	238.9	147.5	73.8	70.9	239.8	94.0
Other industries(b)	177.7	128.7	55.2	46.3	64.9	42.1
<b>All industries</b>	<b>941.2</b>	<b>635.8</b>	<b>501.6</b>	<b>547.6</b>	<b>928.5</b>	<b>534.2</b>

(a) Prior to January 1994, industry information was classified according to Australian Standard Industrial Classification (ASIC). From that time, industry data have been classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC). (b) Include: Agriculture, forestry and fishing; Electricity, gas and water supply; Wholesale trade; Retail trade; Accommodation, cafes and restaurants; Finance and insurance; Property and business services; Government administration and defence; Cultural and recreational services; Personal and other services.

Source: *Industrial Disputes, Australia* (6322.0).

**6.52 INDUSTRIAL DISPUTES, Working Days Lost per Thousand Employees(a)**

Industry(b)	1992	1993	1994	1995	1996	1997
Mining						
Coal	3 078	2 915	5 964	4 660	7 171	4 206
Other	840	254	323	1 359	73	19
Manufacturing						
Metal products; Machinery and equipment	309	426	117	142	146	189
Other	243	121	123	160	70	107
Construction	126	41	59	115	892	290
Transport and storage; Communication services	192	37	137	84	43	101
Education; Health and community services	172	106	63	57	187	73
Other industries(c)	57	41	16	12	17	11
<b>All industries</b>	<b>147</b>	<b>100</b>	<b>76</b>	<b>79</b>	<b>131</b>	<b>75</b>

(a) The basis for the calculation of working days lost per thousand employees was changed in January 1995 to use estimates of employees taken from the Labour Force Survey only. Estimates have been recalculated on this basis for each 12 monthly period back to December 1990. (b) Prior to January 1994, industry information was classified according to ASIC. From that time, industry data have been classified according to ANZSIC. (c) Include: Agriculture, forestry and fishing; Electricity, gas and water supply; Wholesale trade; Retail trade; Accommodation, cafes and restaurants; Finance, and insurance; Government administration and defence; Cultural and recreational services; Personal and other services.

Source: *Industrial Disputes, Australia* (6322.0).

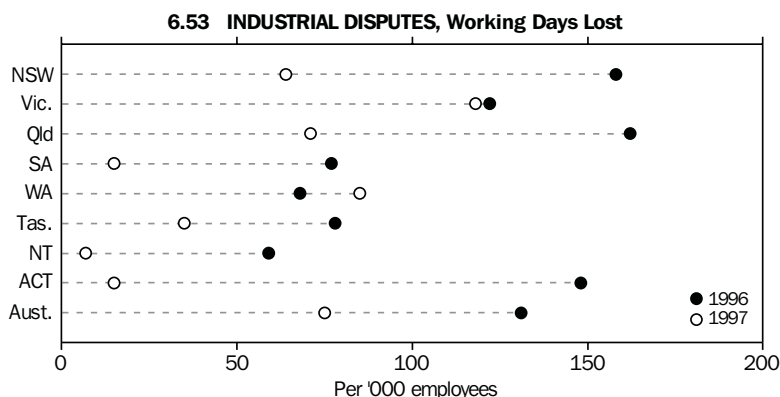
All States and Territories except Western Australia reported a reduction in the number of working days lost per thousand employees during 1997. While Victoria showed a fall of only 3%, the other States and the Territories experienced falls of between 55% (Queensland) and 90% (Australian Capital Territory).

Victoria had the highest level of industrial disputation in 1997, reporting 118 working days lost per thousand employees, 57% higher than the Australian average of 75. Western Australia was the only other State reporting working days lost per thousand employees (85, 13% higher than the Australian average).

Disputes ending during 1997 that lasted less than five days accounted for approximately 61% of

total working days lost, compared to 87% of working days lost in 1996. Disputes which lasted five days or longer accounted for 39% of total working days lost in 1997, a significant increase compared with 1996 (13%). Managerial policy (including award restructuring) continued as the major reported cause of industrial disputes ending during 1997. This cause accounted for 234,400 working days lost (53% of the Australian total).

During 1997, approximately 68% of all disputes (accounting for 56% of working days lost) were directly ended during 1997 by resumption without negotiation. Victoria reported the highest proportion of disputes (36%) that were settled by negotiation, compared with the Australian average of 17%.



Source: *Industrial Disputes, Australia* (6322.0).

Trade union membership

In August 1997, of 6,972,100 employees aged 15 and over, 30% were trade union members in connection with their main job (table 6.55).

Of permanent employees, 36% were trade union members. In comparison, 14% of casual employees were trade union members.

Electricity, gas and water supply, and Communication services were the most unionised industries, with 66% and 60% of

employees respectively being trade union members. Agriculture, forestry and fishing was the least unionised at 7%.

As shown in graph 6.54, the proportion of employees who were trade union members in connection with their main job has been steadily declining for many years. Between August 1986 and August 1997, the level of trade union membership reported by employees declined by around one-third (16 percentage points).



Source: Unpublished data, *Weekly Earnings of Employees (Distribution)*.

**6.55 PROPORTION OF EMPLOYEES WHO WERE TRADE UNION MEMBERS—August 1997**

Industry	Males			Females			Persons		
	Permanent employees	Casual employees	Total	Permanent employees	Casual employees	Total	Permanent employees	Casual employees	Total
	%	%	%	%	%	%	%	%	%
Agriculture, forestry and fishing	12.2	*3.8	8.4	*7.2	*1.7	*3.4	11.3	*3.0	7.1
Mining	49.1	*15.4	46.6	*23.4	*0.0	*18.1	47.0	*11.7	43.9
Manufacturing	43.9	18.5	41.1	25.3	14.8	22.5	40.0	16.9	36.6
Electricity, gas and water supply	68.8	*13.4	66.6	*67.1	*34.8	*60.7	68.6	*21.8	65.9
Construction	43.2	21.6	37.0	*7.8	*2.4	*5.5	39.9	18.6	33.5
Wholesale trade	17.8	*5.9	16.3	*4.1	*6.0	4.5	14.0	*5.9	12.7
Retail trade	17.6	18.1	17.8	34.4	19.4	26.3	25.2	18.9	22.3
Accommodation, cafes and restaurants	21.8	11.6	17.3	21.5	10.4	14.1	21.7	10.8	15.5
Transport and storage	62.4	24.1	54.8	27.7	*7.0	23.7	54.2	20.2	47.5
Communication services	72.1	*13.9	66.9	51.3	*7.7	45.9	65.3	*11.3	59.8
Finance and insurance	31.4	*.0	28.8	44.3	*3.3	40.6	38.7	*2.0	35.5
Property and business services	13.4	11.4	12.8	7.9	*4.0	6.8	10.9	7.9	10.0
Government administration and defence	51.3	*6.4	49.2	41.6	*9.4	36.8	47.2	*8.6	43.5
Education	56.6	*12.4	50.9	56.3	17.4	48.6	56.4	16.2	49.3
Health and community services	42.0	*13.3	37.0	39.0	15.1	34.0	39.7	14.8	34.6
Cultural and recreational services	31.0	*12.3	25.2	23.2	21.6	22.5	27.4	18.0	23.8
Personal and other services	44.4	*6.1	38.5	22.2	*2.9	15.6	35.3	*4.0	27.7
<b>All industries</b>	<b>37.9</b>	<b>14.6</b>	<b>33.0</b>	<b>33.3</b>	<b>13.2</b>	<b>26.9</b>	<b>36.0</b>	<b>13.8</b>	<b>30.3</b>

Source: *Weekly Earnings of Employees, Australia* (6310.0).

## Training

Training continues to be a major element of labour market reform in Australia. The provision of training by enterprises is an integral component of this investment, but can impose a significant cost on employers. It is important to recognise the extent and distribution of these costs across enterprises in order to understand the level of commitment of employers to training.

### Training expenditure

Estimates of the expenditure by employers on the provision of structured training for their employees were collected in the 1996 Training Expenditure Survey, which covered the September quarter 1996. The survey defined

structured training as all training activities which have a predetermined plan and format designed to develop employment-related skills and competencies. Total expenditure on structured training over the three months July to September 1996, by Australian employers, was estimated at \$1,179m. Expenditure for the same period in 1993 was \$1,103m; however while there was a small increase in total expenditure in 1996, employers on average spent less per employee on structured training and provided less hours of training per employee. The proportion of gross wages and salaries spent on training was significantly higher for large employers (3.2%), than for medium (1.9%) and small employers (1.2%) (table 6.56).

**6.56 TRAINING EXPENDITURE, By Employer Size—July to September 1996**

	Unit	No. of employees			
		1-19	20-99	100 or more	Total
Total training expenditure	\$m	115.0	168.4	895.4	1 178.8
Training expenditure as % of gross wages and salaries	%	1.2	1.9	3.2	2.5
Expenditure per employee	\$	71.3	135.8	255.6	185.5
Training per employee	hours	2.4	3.8	6.5	4.9
Employers providing structured training	% of all employers	13.4	50.5	88.3	17.8

Source: *Employer Training Expenditure, Australia* (6353.0).

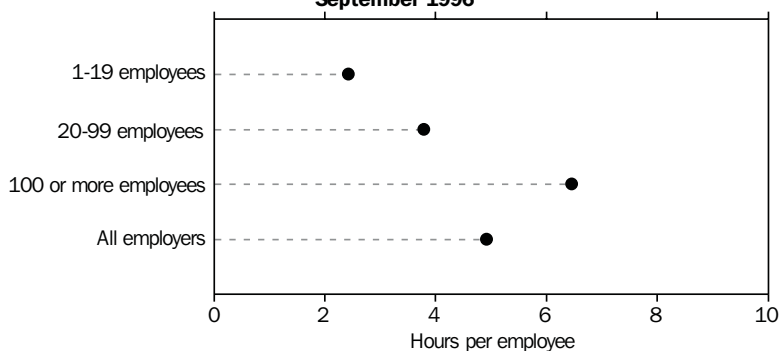
**Training received**

As graph 6.57 shows, on average, employees in large organisations received more than two and a half times the amount of structured training (6.5 hours) received by their counterparts in small organisations (2.4 hours), and one and a half times the amount received in medium-sized organisations (3.8 hours).

Employers provided most training in the field of 'Management and professional' and 'Trade and

apprenticeship' training (both 0.9 hour), though expenditure per employee in the former field of training was more than twice that in the latter (table 6.58). Large employers provided the highest level of this training (1.3 hours), and spent four times as much on the wages and salaries costs for this training (\$29.30 per employee) as small employers (\$7.10), and over double that of medium-sized employers (\$13.50).

**6.57 AVERAGE TRAINING HOURS, By Employer Size—July to September 1996**



Source: *Employer Training Expenditure* (6353.0).

**6.58 FIELDS OF TRAINING—July to September 1996**

Fields of training	Hours per employee	Dollars per employee
Induction	0.4	5.60
General supervision	0.3	5.00
General computing	0.4	8.30
Health and safety	0.4	6.80
Personal development	0.3	6.00
Management and professional	0.9	20.60
Technical and associate-professional	0.5	9.80
Trade and apprenticeship	0.9	8.70
Sales, clerical/office and personal service	0.6	8.90
Plant and machinery	0.3	5.00
Other	0.1	1.80
<b>All fields</b>	<b>4.9</b>	<b>86.40</b>

Source: Employer Training Expenditure, Australia (6353.0).

**Provision of training**

Over the 12-month period ending February 1997, 61% of all employers in Australia provided some form of training to their employees (table 6.59). While 53% of employers provided unstructured training such as unplanned on-the-job training, 35% of employers provided structured training such as training courses and workshops. Of all employers who provided training, 43% provided only unstructured training.

Most employers (83%) reported at least one factor limiting their expenditure on structured training (table 6.60). Of these, 53% indicated that their employees were adequately trained. This applied most frequently to small employers with less than 20 employees.

**6.59 TYPE OF TRAINING PROVIDED, By Employment Size—12 months ending February 1997**

	1–19 employees	20–99 employees	100 or more employees	All employers
Fields of training	%	%	%	%
Structured training	30	71	94	<b>35</b>
Unstructured training	49	86	91	<b>53</b>
Structured or unstructured training	57	94	99	<b>61</b>
No training	43	6	*1	<b>39</b>
Total	100	100	100	<b>100</b>

Source: Employer Training Practices, Australia (6356.0).

**6.60 FACTORS(a) LIMITING EXPENDITURE ON STRUCTURED TRAINING PROVIDED, By Employment Size—12 months ending February 1997**

	1–19 employees	20–99 employees	100 or more employees	All employers
	%	%	%	%
Cost constraints	30	50	56	<b>32</b>
Time constraints	32	52	64	<b>34</b>
Lack of suitable trainers in this organisation	6	11	20	<b>7</b>
External providers ran courses at unsuitable times	6	7	9	<b>6</b>
External providers ran courses at unsuitable locations	6	10	10	<b>7</b>
No suitable training available	9	13	10	<b>9</b>
Current employees adequately trained	46	25	12	<b>44</b>
Recruited trained people	14	20	16	<b>14</b>
Employee resistance to training	2	*7	8	<b>2</b>
No limitations(b)	17	12	19	<b>17</b>
All employers	100	100	100	<b>100</b>

(a) An employer may indicate more than one factor limiting expenditure. (b) Includes Not stated.

Source: Employer Training Practices, Australia (6356.0).

Of the employers who provided structured training during the year, 51% reported that they had increased their overall expenditure on structured training compared with the previous 12 months, while 36% of those who provided unstructured training increased the overall level of such training. Technological change was the most frequently reported factor resulting in increased employer expenditure on structured training for all employer size groups.

Technological change and the recruitment of new employees were significant factors that led to employers increasing the level of unstructured training they provided in the 12 months ending February 1997, compared to the previous 12 months. Each of these factors was reported by just under one-third of employers who provided unstructured training.

**6.61 FACTORS(a) THAT INCREASED EXPENDITURE ON STRUCTURED TRAINING,  
By Employment Size—12 months ending February 1997**

	Employment size			All employers providing structured training %
	1–19 employees %	20–99 employees %	100 or more employees %	
Reported a factor causing increase				
Technological change	28	42	52	<b>32</b>
Availability of external training providers	14	22	16	<b>16</b>
Difficulty in recruiting skilled labour	10	20	13	<b>12</b>
Quality assurance/quality control	17	33	38	<b>21</b>
Enterprise bargaining	*2	*9	17	<b>4</b>
Competition from businesses in Australia or overseas	12	11	19	<b>12</b>
Availability of workplace assessors	*4	4	10	<b>4</b>
Regulation or awards	13	30	45	<b>18</b>
Restructuring	9	21	34	<b>12</b>
Changes in management practices or philosophies	21	37	44	<b>25</b>
Total who reported a factor causing increase	53	69	80	<b>57</b>
Did not report factor causing an increase	47	31	20	<b>43</b>
Total	100	100	100	<b>100</b>

(a) An employer may report more than one factor.

Source: *Employer Training Practices, Australia* (6356.0).



**6.62 FACTORS(a) THAT INCREASED LEVEL OF UNSTRUCTURED TRAINING PROVIDED(b),  
By Employment Size—12 months ending February 1997**

	Employment size			All employers providing unstructured training
	1–19 employees	20–99 employees	100 or more employees	
	%	%	%	%
Reported a factor causing increase				
Cost considerations	10	17	16	<b>11</b>
Ease of providing employees with unstructured training	15	18	22	<b>16</b>
Effectiveness of unstructured training in meeting training needs	18	20	22	<b>19</b>
Technological change	29	32	41	<b>30</b>
Competition from businesses in Australia and overseas	10	13	10	<b>10</b>
Restructuring of the organisation/changes in management personnel	9	14	29	<b>11</b>
Changes in management practices or philosophies	18	21	32	<b>19</b>
Total employers reporting a factor causing an increase	55	56	67	<b>56</b>
Did not report a factor causing an increase	45	44	33	<b>44</b>
Total	100	100	100	<b>100</b>

(a) An employer may report more than one factor. (b) An employer may report a factor causing an increase, but not report an overall increase in level of training provided.

Source: *Employer Training Practices, Australia, February 1997* (6356.0).

## Commonwealth government labour market assistance

Major reforms to the Commonwealth Government's labour market assistance implemented in 1997–98 included:

- the formal establishment of an integrated Commonwealth services delivery agency (Centrelink) providing income support, basic employment and student assistance services. In the employment area, Centrelink undertakes a range of services previously delivered by the Commonwealth Employment Service, such as job seeker registration, assessment and referral to employment services;
- more than 300 organisations from the private, community-based and government sectors were contracted to form the new nation-wide Job Network which provides employment services for job seekers and employers on a competitive basis. Under Job Network, the focus is on the outcomes that service providers achieve rather than the processes they use; and
- the establishment of Employment National, a corporatised government entity, to provide employment services on the same terms and conditions as other providers.

Job Network commenced on 1 May 1998 and the first contract period will run through to 30 November 1999. The distinctive features of the new arrangements are that:

- Job Network increases client choice, with job seekers and employers free to choose whichever Job Network organisation they consider will best meet their needs;
- providers have the flexibility to tailor their services to meet the needs of individual job seekers; and
- there is full competition between providers, and payments are based on outcomes.

Job Network provides the following main services to employers and unemployed people from over 1400 sites around Australia:

- *job matching* of employers' vacancies to unemployed people;
- *job search training* of unemployed people in the skills for successful job search;
- *intensive assistance* for long term unemployed and other disadvantaged job seekers to overcome their employment barriers and place them in jobs;
- *project contracting* for the supply of labour to harvest regions;

- *New Apprenticeships Centres* (NACs)—a ‘one stop shop’ providing integrated and streamlined apprenticeship and traineeship services to employers and job seekers; and
- *New Enterprise Incentive Scheme* (NEIS)—assistance for unemployed people to help them establish their own businesses.

In some Centrelink offices, Job Network Access provides all job seekers, including those not in receipt of unemployment benefit, with free access to facilities to search for jobs, investigate career options, contact employers and Job Network organisations, and prepare job applications.

Job Network is funded by ‘cashing out’ most of the funding previously provided for labour market program and case management. A small number of labour market programs were retained to provide entry level training incentives, regional assistance and special support for indigenous people and migrants. The Job Network Request for Tender document indicated that expenditure of \$1.7b was expected over the first contract period (1 May 1998 to 30 November 1999). Job Network organisations

would be paid over \$1.1b for Intensive Assistance, \$50m for Job Search Training, and \$250m for Job Matching services. A further \$110m would be provided for NACs and \$122m for NEIS.

In August 1998, further initiatives to accelerate the growth of Job Network were announced:

- from 1 September 1998, access to Government funded Job Matching has been extended to job seekers not receiving income support (cost of \$45m); and
- funding has been provided for market development to Job Network members contracted to provide Job Matching services (cost of \$10.5m).

The Community Support Program (CSP), also implemented on 1 May 1998, provides relevant assistance to the small number of highly disadvantaged job seekers in receipt of unemployment allowances. More than \$45m was allocated over four years from May 1998 to assist 25,500 job seekers with special needs under CSP, through 76 organisations from about 230 sites around Australia.

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## Introduction

The economic wellbeing or standard of living of individuals and families is largely dependent on the economic and social resources available to provide for the consumption of goods and services and for participation in the life of society. Such resources may be in the form of cash income received from wages and salaries or investments, or as income support from government. Other factors can also contribute to economic resources, including personal resources such as savings, services such as aged care, respite care and child care from government and welfare organisations, and assistance from family and friends.

Government programs aim to help the economically disadvantaged to achieve social and economic outcomes and to participate in society. Such programs include those of the Department of Family and Community Services (F&CS), which provides income security for the retired, people with disabilities, carers, unemployed people and families with children. Other departments provide income support for other special groups, such as war veterans, war widows and their families, and students. In addition to cash income, government programs also help those with low incomes to meet payments for housing through rent assistance, and for a range of goods and services through pensioner concession and health cards and other services aimed at helping people in personal and social hardship. Other types of programs aim to encourage the participation of people with disabilities, such as those provided by the Disability Services Program in the Department of Health and Aged Care which assist with employment and advocacy.

This chapter provides information on the levels and sources of income of Australia's population and on the levels and patterns of expenditure on consumer goods and services. Further information is provided on the main income support programs of the Commonwealth Government, describing the eligibility requirements, numbers of beneficiaries and government expenditure on these programs. It covers these in four sections: *Income support programs of the Department of Family and Community Services*; *Community support programs of the Department of Family and*

*Community Services*; *aged care programs of the Department of Health and Aged Care*; and *Services provided by the Department of Veterans' Affairs*.

Sections are included on the nature and extent of child care usage, and on people's unmet need for assistance because of age and disability. Both sections are based on ABS surveys, namely the 1996 Child Care Survey and the 1993 Survey of Disability, Ageing and Carers.

## Household income and expenditure

### Household income

Regular income is the means by which most individuals and families finance current consumption and make provision for the future through saving and investment. The level of cash income can be used as an indicator of the standard of living for most of the population. Information about the levels and sources of income is used to monitor shares of income going to labour, capital and transfers. From a social welfare perspective, analysis of cash income distribution indicates which groups in the population are most disadvantaged, and provides information on the number and characteristics of those needing access to government services.

The ABS conducted six income distribution surveys between 1968 and 1990. In July 1994, the ABS started collecting income data on a continuous basis in the Survey of Income and Housing Costs. These surveys have provided information on the current and annual income of individuals and family units as well as on their characteristics such as age, education, labour force participation, source of income, and size and composition of family units.

In addition, the ABS has conducted five household expenditure surveys. The main purpose of these surveys is to produce estimates of household expenditure on different commodities and services. Information on current income is collected to explain variations in expenditure levels and to identify groups of special interest (e.g. government income support recipients and low income households).

The most recent information on current income distribution is available from the 1996–97 Survey of Income and Housing Costs. Income refers to gross receipts of recurring and usually regular cash flows at the time of interview. It comprises cash receipts from wages and salaries, profit or loss from own business, property income in the form of interest, rent and dividends, private transfers such as superannuation and child support, and cash transfers from government in the form of benefits and allowances.

While income is usually received by individuals, analyses of the distribution of income are traditionally based on incomes of families or groups of individuals, which reflects the sharing of income that takes place within families. The following analysis is based on the income of a restricted family grouping called an 'income

unit', which assumes that income is shared between partners in couple families and between parents and dependent children. Other family members such as non-dependent children are treated as separate income units. Analyses of income distribution using different units, such as families and households, provide different results.

### Income distribution

As table 7.1 shows, in 1996–97 the average gross weekly income for all income units was \$625. The median gross weekly income (i.e. the midpoint when all units are ranked in order of income) was considerably lower at \$477. This difference reflects the typically asymmetric distribution of income where a large number of units have nil or very low incomes and a smaller number have very high incomes.

**7.1 ALL INCOME UNITS, Selected Characteristics by Gross Weekly Income Quintile Groups—1996–97**

	Unit	Lowest 20%	Second quintile	Third quintile	Fourth quintile	Highest 20%	All income units
Upper boundary of quintile group	\$	209	376	593	956	..	—
Mean income	\$	121	294	476	752	1 485	<b>625</b>
Median income	\$	168	295	477	746	1 307	<b>477</b>
Principal source of income (% of income units)							
Weekly employee income	%	8.6	26.4	66.9	85.2	87.1	<b>54.8</b>
Weekly own business income	%	2.0	3.5	6.5	7.3	9.6	<b>5.8</b>
Weekly government pensions and allowances	%	69.0	62.1	16.7	1.9	**0.1	<b>30.0</b>
Weekly income from other sources	%	9.5	8.0	9.9	5.6	3.3	<b>7.3</b>
Total(a)	%	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>
Income unit type (% of income units)							
Couple with dependent children	%	3.0	6.7	17.5	34.6	49.8	<b>22.3</b>
Couple without dependent children	%	5.7	33.3	21.4	22.9	37.6	<b>24.2</b>
One parent	%	1.6	12.7	6.8	4.1	*0.9	<b>5.2</b>
Lone person	%	89.7	47.1	54.2	38.5	11.6	<b>48.3</b>
Total	%	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>
Earners							
None	%	84.4	65.0	21.1	5.6	1.8	<b>35.6</b>
One	%	13.4	32.6	71.4	65.8	29.4	<b>42.5</b>
Two	%	2.2	2.4	7.5	28.7	68.8	<b>21.9</b>
Total earners	%	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>
Dwelling tenure type (% of income units)							
Owners without a mortgage	%	29.9	42.1	27.5	26.1	31.1	<b>31.3</b>
Owners with a mortgage	%	5.6	6.7	15.0	32.4	47.6	<b>21.4</b>
Renters							
Public	%	7.8	7.4	4.6	1.5	*0.5	<b>4.4</b>
Private	%	16.5	20.3	26.9	25.1	14.2	<b>20.6</b>
Other	%	11.5	9.7	10.4	4.6	*1.0	<b>7.5</b>
Total renters	%	39.3	39.5	43.8	34.0	17.8	<b>34.9</b>
Other, including rent free	%	25.1	11.6	13.7	7.6	3.6	<b>12.3</b>
Total	%	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>
Estimated number of income units							
Capital city	'000	1 144	1 104	1 161	1 217	1 289	<b>5 915</b>
Rest of State	'000	678	712	654	596	528	<b>3 168</b>
Total	'000	1 823	1 816	1 814	1 813	1 817	<b>9 083</b>

(a) Includes income units with nil or negative income.

Source: Unpublished data, 1996–97 Survey of Income and Housing Costs.



Income units cover a wide variety of individuals and family types and include varying numbers of people. These range from young single people just out of school, to couples with dependent children, through to elderly retired couples or single people, that is, units at various stages of the life cycle and working career. It is therefore not surprising that income is distributed unevenly across all income units. This was the case in 1996–97 when income units in the lowest quintile (i.e. the lowest 20% of units when ranked according to income) received an average gross weekly income of \$121, compared to \$1,485 received by those in the highest quintile.

Income units in the lowest quintile were mainly single people. One-third of these were living with parents or with relatives. Few people were employed and most relied on government pensions and allowances as their principal source of income.

In comparison, income units in the highest quintile were usually couples with or without dependent children, and most had two earners. Their principal source of income was mainly wages and salaries, with very few relying on government pensions and allowances.

### **Life cycle stages of income units**

Levels of income are related to life cycle stages such as youth, and the forming, maturing and dissolving of nuclear families (table 7.2).

In 1996–97, young independent single persons aged under 35 had an average weekly income of \$412. However, this group had a wide range of incomes resulting, partly, from the differing attachment to the labour force of young people making the transition from full-time education to full-time work. The mean income of those aged

25–34 was considerably higher than the mean income of those under 25 (at \$524 and \$334 respectively).

As young people enter into relationships their income rises as they often have two income earners contributing to their family income. Young couples under 35 with no dependent children received an average of \$1,091 per week. For the majority (81%) of this group both partners were in employment.

For couples the birth of the first child and the early years of child rearing are associated with reduced labour force participation and are often accompanied by a fall in family income. The average weekly income of couples with the eldest child under five years of age was \$839. Income rises again as the children and parents grow older. Couples whose eldest dependent child was aged 15 years and over had an average income of \$1,171 per week.

The need to provide for dependent children has ended by the time most people reach their mid fifties. These post child-rearing years are accompanied by a decline in income. Couples in the 55–64 age group had an average income of \$684 per week. This group had a wide range of incomes resulting from the transition from full-time employment to retirement.

The considerably lower incomes that accompany retirement are evident in the average incomes of those aged 65 years or over. Couples of this age had an average income of \$479 while single persons over 65 had an average income of \$242. Government pensions formed the main source of income for 65% of the couples and 81% of single people in this age group. About 26% of couples and 16% of single people were living on income from other sources such as superannuation and investments.

## 7.2 LIFE CYCLE GROUPS, Selected Characteristics by Gross Weekly Income—1996–97

	Unit	Single person aged under 35	Couple without dependent children, reference person aged under 35	Couple with dependent children and age of eldest child (years)		Couple without dependent children, reference person aged		Single person aged 65 and over
				Under 5	15–24	55–64	65 and over	
Mean income	\$	412	1 091	839	1 171	684	479	242
Median income	\$	395	1 085	749	1 044	533	348	194
Principal source of income (% of income units)								
Weekly employee income	%	72.1	87.5	77.4	75.8	47.0	5.1	*0.4
Weekly own business income	%	2.2	*5.4	8.3	10.1	10.4	*2.9	*1.5
Weekly government pensions and allowances	%	16.6	*2.8	12.2	12.1	28.1	65.3	81.4
Weekly income from other sources	%	4.6	*1.7	*1.3	*1.6	12.3	25.9	15.6
Total(a)	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Earners								
None	%	23.6	*4.8	9.8	10.9	34.5	86.4	96.7
One	%	76.4	14.5	49.9	23.7	30.0	8.8	3.3
Two	%	..	80.7	40.3	65.4	35.6	4.8	..
Total	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Dwelling tenure type (% of income units)								
Owners without a mortgage	%	1.7	*5.2	21.2	42.4	72.8	84.0	67.0
Owners with a mortgage	%	5.6	46.4	44.8	43.4	15.5	4.9	2.6
Renters								
Public	%	1.1	*0.7	*2.8	*2.5	*2.4	*2.5	9.0
Private	%	34.1	38.4	23.3	9.1	4.9	3.3	5.7
Other	%	26.3	*2.4	5.3	*1.2	*1.3	*1.4	5.9
Total renters	%	61.5	41.5	31.4	12.8	8.6	7.1	20.6
Other, including rent free	%	31.2	7.0	*2.5	*1.4	*3.1	4.0	9.9
Total	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Estimated number of income units	'000	2 311	325	422	610	554	685	867

(a) Includes income units with nil or negative income from all sources.

Source: *Income Distribution, Australia* (6523.0).

## Changes in income, 1994–95 to 1996–97

From 1994–95 to 1996–97, the mean (average) gross weekly income for all income units in private dwellings increased by 5% from \$596 to \$625 (table 7.3). The mean weekly income of the largest group of income units, those who were mainly dependent on wage and salary income, increased by 5% from \$801 to \$844. The mean income of those relying on government cash benefits increased by 10% over this period.

Movements in income from other sources over the period were more volatile. Mean incomes for units dependent on their own businesses were

particularly volatile. In 1996–97, their income was slightly lower than in the previous year but 7% higher than in 1994–95. Mean income of those dependent on other income increased by 21% between 1994–95 and 1996–97.

The degree of inequality in the income distribution of all income units remained almost unchanged between 1994–95 and 1996–97.

Income inequality can be measured by comparing the share of total income received by each quintile group. The shares of total income received by the income quintile groups changed slightly over the three years, but the changes are not statistically significant.

**7.3 ALL INCOME UNITS, Mean Gross Weekly Income by Principal Source of Income**

	Mean weekly income		
	1994-95	1995-96	1996-97
	\$	\$	\$
Principal source of income			
Weekly employee income	801	816	844
Weekly own business income	850	916	908
Weekly government pensions and allowances	231	238	254
Weekly income from other sources	420	432	507
All income units(a)	596	609	625

(a) Includes income units with nil or negative income from all sources.

Source: *Income Distribution, Australia* (6523.0).

**7.4 ALL INCOME UNITS, Percentage Share of Gross Weekly Income by Quintile**

	Percentage share		
	1994-95	1995-96	1996-97
	%	%	%
Gross weekly income quintile			
Lowest	3.6	3.8	3.8
Second	9.3	9.1	9.4
Third	15.2	15.0	15.2
Fourth	24.0	23.7	24.0
Highest	47.9	48.3	47.5
All income units	100.0	100.0	100.0

Source: *Income Distribution, Australia* (6523.0).

**Household expenditure**

Information about income provides one indicator of the standard of living. However it does not always accurately reflect command over goods and services, particularly where income is variable or where expenditure is financed through running down assets or acquisition of debts. In such cases, the levels and patterns of household expenditure may provide an alternative measure of living standards.

Household expenditure information can be used to examine the relative standards of living of different household types such as those with low incomes, large families, sole parent families and pensioner households.

The latest expenditure information is available from the 1993-94 Household Expenditure Survey. This was the fifth major survey of its kind undertaken by the ABS. It collected detailed information about expenditure, income and characteristics of households in Australia.

The household is used as the basic unit of analysis, because much of the expenditure

covers household items. If smaller units are adopted, for example each person, then it is difficult to attribute to individual household members the use of shared items such as accommodation and household goods.

**Levels of expenditure**

In 1993-94, Australian households spent an average of \$602 per week on goods and services (table 7.5). The level of household expenditure is closely related to characteristics of households, most particularly their income, but also household composition and household size. For example, the proportion of total household expenditure spent on different goods and services differs between households with different main sources of income. In households whose principal source of income was wages and salaries (employee income), the proportion of expenditure on food and non-alcoholic beverages was 18%, compared with 22% in households whose main source of income was government pensions and allowances. Households whose principal source of income was employee income had an average weekly income of \$972, while households whose

### 7.5 HOUSEHOLD EXPENDITURE AND CHARACTERISTICS, By Principal Source of Household Income—1993–94

	Unit	Employee income	Own business	Super-annuation	Government pensions and allowances	Other	All households
Mean gross weekly income	\$	972	864	495	271	517	723
Mean age of reference person	years	41	44	67	58	59	47
Household composition (% of households)							
Couple only	%	22.4	28.5	50.8	27.9	38.3	25.9
Couple with dependent children only	%	31.5	38.2	3.0	9.7	5.5	23.7
Couple other	%	16.4	15.2	4.6	5.7	5.9	12.4
One parent	%	4.7	1.2	3.3	12.2	4.2	6.6
Lone person	%	12.3	12.2	34.7	38.4	38.3	21.8
Other household types	%	12.7	4.7	3.7	6.1	7.7	9.7
Total	%	100.0	100.0	100.0	100.0	100.0	100.0
Expenditure (as % of total expenditure)							
Current housing costs (selected dwelling)	%	14.4	12.9	8.7	15.6	11.0	14.2
Fuel and power	%	2.4	3.0	3.1	4.1	2.8	2.8
Food and non alcoholic beverages	%	17.6	20.0	17.7	22.0	16.2	18.4
Alcoholic beverages	%	3.0	3.2	2.9	2.5	2.4	2.9
Tobacco	%	1.3	1.4	1.1	2.5	0.9	1.5
Clothing and footwear	%	5.9	5.8	5.4	4.4	5.9	5.6
Household furnishings and equipment	%	6.6	6.6	7.4	6.2	7.3	6.6
Household services and operation	%	4.8	5.9	5.6	6.8	5.6	5.2
Medical care and health expenses	%	4.3	5.4	6.8	4.0	6.4	4.5
Transport	%	16.4	14.1	14.7	12.8	15.2	15.5
Recreation	%	13.5	11.7	13.1	12.1	14.5	13.2
Personal care	%	1.9	2.0	1.9	2.0	1.7	1.9
Miscellaneous commodities and services	%	7.9	8.0	11.7	5.2	10.0	7.6
Total	%	100.0	100.0	100.0	100.0	100.0	100.0
Average weekly expenditure on all commodities and services	\$	744	648	507	333	582	602

Source: Unpublished data, 1993–94 Household Expenditure Survey.

main source of income was government pensions and allowances had an average weekly income of \$271.

Household expenditure also varies in accordance with stages of the family life cycle, generally rising through the early stages of family creation and, with increasing family size, reaching a peak

as children mature to adulthood. In subsequent stages of the life cycle, household expenditure declines as children leave home and household size declines. This trend follows very closely the trend in the level of household income over the life cycle of the family.

## Income support programs of the Department of Family and Community Services

On 1 July 1947, with the passage of the *Social Services Consolidation Act 1947*, all Acts providing social service benefits were amalgamated into the *Social Security Act 1947*. This Act was repealed and replaced with the *Social Security Act 1991* which commenced on 1 July 1991.

The main income support payments provided by the Commonwealth under the 1991 Act for the financial years 1995–98 and the date on which each payment came into effect are listed in table 7.6.

An outline, together with associated statistics, of the main social security payments in effect throughout the 1997–98 financial year is given below.

### 7.6 INCOME SUPPORT PAYMENTS

	1995–96	1996–97	1997–98	
Type of payment	\$'000	\$'000	\$'000	Date of operation
The retired				
Age Pension(a)	12 383 929	13 204 658	13 141 895	1 July 1909
Wife Pension Age(b)	..	..	254 752	1 July 1997
People with disabilities and the sick				
Disability Support Pension	4 917 412	5 299 148	4 599 452	12 November 1991
Disability Wage Supplement(c)	556	2 193	2 034	—
Rehabilitation Allowance	7	–36	–219	1 March 1983
Wife Pension DSP(d)	..	..	599 136	1 July 1997
Carer Payment	..	..	258 474	1 July 1997
Sickness Allowance	354 012	144 280	92 684	12 November 1991
Mobility Allowance	34 149	38 118	41 863	1 April 1983
Child Disability Allowance	213 658	233 106	248 429	15 November 1987
The unemployed				
Job Search Allowance	3 141 368	..	..	1 July 1991
Newstart Allowance	2 623 805	6 047 829	5 757 731	1 July 1991
Mature Age Allowance	436 551	472 469	443 380	1 March 1994
Partner Allowance	462 547	497 841	532 278	20 September 1994
Youth Training Allowance	46 514	159 138	158 177	1 January 1995
Families with children				
Basic Family Payment	1 013 184	–2 803	..	1 January 1993
Additional Family Payment	1 828 446	–2 927	..	1 January 1993
Family Payment	3 036 055	6 284 731	6 363 712	1 January 1996
Maternity Allowance	65 165	196 716	183 607	1 February 1996
Home Child Care Allowance	..	–1 049	..	29 September 1994
Parenting Allowance(e)	2 091 321	2 216 628	1 570 502	1 July 1995
Sole Parent Pension(e)	2 760 105	2 992 322	2 206 233	1 March 1989
Parenting Payment(e)	..	..	1 455 563	20 March 1998
Double Orphan Allowance	1 654	1 681	1 778	26 September 1973
Family Tax Payment	..	288 564	558 735	1 January 1997
Provision for special circumstances				
Special Benefit	157 088	132 289	95 867	1 July 1945
Widow Class 'B' Pension	464 952	296 905	147 187	30 June 1942
Widow Allowance	88 233	117 273	180 112	1 January 1995
Widowed Persons Allowance	..	..	..	1 March 1989
Bereavement Allowance	1 296	1 178	997	1 January 1995
Disaster Relief Payment	..	–12	28	1 August 1990
<b>Total F&amp;CS income support</b>	<b>36 122 006</b>	<b>38 550 242</b>	<b>38 894 385</b>	—

(a) From 1997–98 wives and carers transferred from Age Pension to separate appropriations. (b) Combined with Age pension prior to 1997–98. (c) DWS recipients transferred to Disability Support Pension from 1 January 1998. (d) Combined with Disability Support Pension prior to 1997–98. (e) Parenting Allowance and Sole Parent Pension transferred to Parenting Payment on 20 March 1998.

Source: Department of Family and Community Services.

## 7.7 AGE PENSIONERS

	Unit	June 1995	June 1996	June 1997	June 1998
Age group (years)					
60–64	no.	211 685	193 988	208 309	187 256
65–69	no.	447 525	464 417	481 624	479 884
70–74	no.	319 538	335 197	364 766	388 474
75 and over	no.	599 950	609 232	625 515	627 003
Males	no.	544 571	570 328	597 859	613 587
Females	no.	1 034 127	1 032 506	1 082 355	1 069 030
Persons	no.	1 578 698	1 602 834	1 680 214	1 682 617
Wife pensioners (age)	no.	39 611	41 125	36 577	(a)10 424
Total payments in financial year ending 30 June(b)	\$'000	11 884 066	12 383 929	13 204 658	13 396 647

(a) From 1997–98 wives and carers transferred from Age Pension to separate appropriations. (b) Includes allowances, Rent Assistance, and Wife Pension (age) where applicable.

Source: Department of Family and Community Services.

### Payments for the retired

Age Pension is payable to men who are over 65 years of age and women who are over 61 years of age, and is subject to residence qualifications. The minimum Age Pension age for women will increase to 61.5 on 1 July 1999. The minimum Age Pension age for women is increasing by six months at two year intervals from age 60 at 1 July 1995 until 1 July 2013, when it will be 65 years. The number of age pensioners at June for the years 1995 to 1998 is shown in table 7.7.

Age Pension is means-tested based on pensioners' income and assets.

Wife Pension (age) is gradually being phased out. New grants of Wife Pension ceased after 30 June 1995. However, women receiving Wife Pension (or who had lodged claims and were entitled to the pension) at that date continue to receive this payment.

New applicants apply for another type of payment such as Parenting Allowance, Partner Allowance, Carer Pension, Disability Support Pension, Newstart Allowance or Sickness Allowance.

### Payments for people with disabilities and the sick

#### Disability Support Pension (DSP)

DSP is paid to a person aged 16 years or over who has a physical, intellectual or psychiatric impairment of at least 20% and who is assessed as being unable to work for at least 30 hours a week at full award wages, or to be retrained for such work, for at least two years. Table 7.8 shows the number of disability support pensioners at June for the years 1995 to 1998.

DSP for people aged 21 years and over is paid at the same rate as Age Pension and is subject to the same income and assets tests, except for permanently blind recipients, who are not subject to either the income or assets test. Youth rates apply to those aged under 21 years. These are largely tied to Youth Allowance rates but include a supplement of \$75.10 per fortnight. Youth rates are not subject to parental income or assets tests. A Pharmaceutical Allowance of \$5.40 per fortnight (\$2.70 per fortnight each for couples) is also paid to people receiving DSP.

Disability Support pensioners and other people with disabilities can gain access to rehabilitation, training, labour market programs or labour force re-entry assistance.

**7.8 DISABILITY SUPPORT PENSIONERS**

	Unit	June 1995	June 1996	June 1997	June 1998
Age group (years)					
16–19	no.	10 295	11 039	12 313	13 178
20–39	no.	105 889	113 450	119 990	124 712
40–59	no.	254 258	277 901	298 530	311 398
60 and over	no.	93 988	96 845	96 681	104 048
Males	no.	324 672	340 256	352 607	361 539
Females	no.	139 758	158 979	174 907	191 797
Persons	no.	464 430	499 235	527 514	553 336
Wife pensioners (DSP)	no.	121 839	107 803	91 307	n.y.a.
Total payments for financial year ending 30 June(a)	\$'000	4 524 754	4 917 412	5 299 148	5 198 588

(a) Includes allowances, Rent Assistance and Wife Pension (DSP) where applicable.

Source: Department of Family and Community Services.

**Carer Payment**

Carer Payment, formerly known as Carer Pension, is paid to people who are without other means of support because they are providing constant care or supervision to a person aged 16 years or over with a physical, intellectual or psychiatric disability or a person who is frail aged, either permanently or for an extended period (six months or more). The carer must personally provide this level of care or supervision in the private home of the care recipient, but is not required to live in or adjacent to the care recipient's home. The carer must have residential qualifications, with income and assets below the levels where qualification ceases under the pension income and assets tests. The rate of Carer Payment is the same as for other pensions.

From 1 July 1998, eligibility for Carer Payment has been extended to carers of children under 16 years of age with profound disabilities. The criteria for this payment focus on the high level of care provided by parents and other carers to maintain comfort, sustain life, or attend to a

bodily function that the child with a profound disability cannot manage alone. Also from 1 July 1998, the number of days a carer can take as a break from caring has been increased. Table 7.9 shows the number of Carer Payment recipients at June for the years 1995 to 1998.

**Sickness Allowance**

Sickness Allowance is paid to people over school leaving age but below Age Pension age who are temporarily unable to work or continue with their full-time studies due to illness or injury. To be eligible, the person must have a job or study to which they can return. If they become temporarily incapacitated while unemployed, they receive Newstart Allowance (NSA) instead (as a result of changes implemented in March 1996). People on full pay sick leave do not qualify.

**Child Disability Allowance**

Child Disability Allowance may be paid to a parent or guardian of a child aged under 16 years or a full-time student aged 16–21 years who lives in the family home.

**7.9 CARER PAYMENT, By Number of Recipients**

	Unit	June 1995	June 1996	June 1997	June 1998
Type					
Carer Payment (Age)	no.	8 324	9 500	10 954	11 740
Carer Payment (DSP)	no.	10 633	13 483	15 735	18 556
Carer Payment (Other)	no.	1 141	2 054	2 869	3 683
<b>Total</b>	no.	<b>20 098</b>	<b>25 037</b>	<b>29 558</b>	<b>33 979</b>

Source: Department of Family and Community Services.



From 1 July 1998, there are two levels of assistance of Child Disability Allowance. This is in recognition of the fact that the impact on a family will vary according to the level of severity of the child's disability.

The first level of assistance provides for a Health Care Card for children who function normally or close to normally for their age, but require substantial additional care and attention because of the disability. Parents qualify for the Health Care Card if the child requires at least 14 hours per week of additional care and attention.

The second level of assistance provides for a fortnightly payment of \$75.10 and a Health Care Card for children with moderate to severe levels of functional disability. For the higher level of entitlement, the level of severity of a disability is determined by the new Child Disability Assessment Tool (CDAT). The CDAT measures the level of severity of the disability by looking at whether the child functions according to standards appropriate to his or her age.

The assessment regime includes two lists of recognised disabilities that will permit automatic entry to the program for parents of children with certain conditions.

Child Disability Allowance is not taxable and is not subject to income or assets tests. The Allowance is not paid where the young person is receiving an income support payment in his or her own right. In June 1998, there were 90,830 families (101,377 entitled children) in receipt of Child Disability Allowance.

## **Payments for the unemployed**

### **Newstart Allowance (NSA)**

NSA is paid to people aged 21 years or over and under Age Pension age who are temporarily unemployed and actively searching for work. To qualify for NSA a person must be a permanent resident of Australia and reside in Australia.

Newstart recipients are required to satisfy the activity test (there are exceptions in certain cases, such as when the person is temporarily incapacitated). A person satisfies the activity test if they are actively seeking and willing to undertake suitable paid work, including casual and part-time work. The activity test can also be satisfied in other ways including, for example, undertaking a course of vocational training,

participating in a Work for the Dole Scheme, or entering and complying with the terms of an activity agreement.

NSA is subject to the allowance income and assets test. Newstart allowees are required to complete a fortnightly income statement (in some circumstances this period may be extended) to advise of changes that may affect the entitlement to NSA or rate payable, and in some cases to provide details of their jobseeking efforts.

### **Youth Training Allowance (YTA)**

YTA is paid to unemployed people under the age of 18 years. YTA recipients participate in the Youth Training Initiative which seeks to ensure that young people do not become long-term unemployed. It provides access to entry level training, labour market program places and case management through Centrelink, starting no later than 13 weeks after registration.

YTA is paid directly to young people at the three AUSTUDY basic rates of payment (at home, away from home, and independent/homeless). All rates are subject to income and assets tests. The at home and away from home rates are also subject to parental income and assets tests.

### **Youth Allowance**

From 1 July 1998, the new Youth Allowance replaced five former schemes for young people, including the Youth Training Allowance. Other schemes which the Youth Allowance replaced are AUSTUDY for students aged 16–24 years; Newstart Allowance for the unemployed aged 16–20 years; and Sickness Allowance for 16–20 year olds and those secondary students aged 16–18 years getting more than the minimum rate Family Allowance and not formerly getting AUSTUDY.

### **Mature Age Allowance (MAA)**

MAA is a non-activity tested income support payment. It is in recognition of the difficulties faced by older long-term unemployed in obtaining suitable work.

To qualify for MAA from 1 July 1996 a person must have turned 60 years, but be less than Age Pension age; and

- either be receiving Newstart Allowance and have been receiving an income support payment for a continuous period of at least nine months immediately before claiming;



- or have received at least one payment of a DSS pension, a Widow Allowance, a Partner Allowance, a Sickness Allowance, a Department of Veterans' Affairs service pension, an AUSTUDY payment or a Parenting Payment (other than a non-benefit PP (partnered)) at any time within the 13 weeks immediately before claiming;
- or have previously received MAA; and
- have no recent workforce experience (defined as at least 20 hours a week for a total of 13 weeks or more in the previous 12 months); and
- be an Australian resident and in Australia.

Recipients of MAA are paid at the higher (single) allowance rate and are subject to the allowance income and assets test. Mature Age allowees are eligible to receive a Pensioner Concession Card.

### Partner Allowance

Prior to the introduction of Partner Allowance, allowees with a partner received a married rate of allowance which included an amount for the support of a dependent spouse. This married rate of payment was abolished, and Partner Allowance (at half the married rate) was paid directly to the dependent partner.

Since 1 July 1995, Partner Allowance is payable to partners of persons in receipt of NSA, Sickness Allowance, Special Benefit, Rehabilitation Allowance, Age Pension, DSP, Disability Wage Supplement, MAA or the Department of Veterans' Affairs Service Pension. From this time, the payment has been limited to persons born on or before 1 July 1955 who have no dependent children and who have no recent workforce experience. Partner Allowance is a non-activity

tested payment subject to the income and assets test; partners who do not qualify for Partner Allowance need to qualify for another payment such as Parenting or NSA.

## Payment for families with children

### Family Allowance

Family Allowance is paid for dependent children aged under 16 years and dependent full-time students aged 16–18 years who are not eligible for a payment such as Youth Allowance or ABSTUDY.

The rate of Family Allowance depends on the family's income and assets, the number and ages of children in the family, whether the family is renting privately and whether the parent is single. The maximum rate of Family Allowance is paid to low income families. Family Allowance is reduced by 50 cents for each dollar of income over the income free area (in 1998 this amount is \$23,400 for a one child family) until the minimum Family Allowance rate (\$23.50) is reached. No Family Allowance is payable if family income is more than \$65,941 (plus \$3,298 for each child after the first).

Multiple Birth Allowance is payable with Family Allowance in respect of multiple (three or more) births until the children reach six years.

Payments are made to the primary carer of the children. Family Allowance can also be paid to approved charitable, religious or government institutions for children in their care.

Table 7.10 shows the number of customers receiving Family Allowance and the number of children for whom payment is made.

**7.10 FAMILY ALLOWANCE**

	Unit	June 1995	June 1996	June 1997	June 1998
Family Allowance at the minimum rate					
Customers	no.	967 528	928 523	893 207	866 440
Children	no.	1 814 944	1 738 323	1 669 930	1 619 438
Family Allowance above the minimum rate					
Customers	no.	836 590	883 934	918 538	909 223
Children	no.	1 671 372	1 759 144	1 821 230	1 799 427
Total on Family Allowance					
Customers	no.	1 804 118	1 812 457	1 811 745	1 775 663
Children	no.	3 486 316	3 497 467	3 491 160	3 418 865
Total payments for financial year ending 30 June	\$'000	5 551 644	5 877 685	6 284 731	n.y.a.

Source: Department of Family and Community Services.

## Family Tax Payment

The Family Tax Payment was introduced on 1 January 1997 and is part of the Government's Family Tax Initiative to provide additional assistance to families with children. The majority of eligible families receive assistance through the taxation system. However, low income families receive an equivalent level of assistance in the form of a fortnightly cash payment—the Family Tax Payment, through the Department of Family and Community Services.

## Parenting Payment

Parenting Payment was introduced in March 1998 incorporating the previous Sole Parent Pension and Parenting Allowance. Therefore it has two main streams:

- Parenting Payment (single) which is payable to lone parents under pension rates and conditions with the maximum payment equal to the Age Pension (single rate); and
- Parenting Payment (partnered) which is payable to partnered parents. This stream has two components:
  - Basic Parenting Payment, which is free of an assets test and is income tested only on the income of the primary carer; and

- Additional Parenting Payment, which is paid under allowance rates and conditions. It is taxable, income tested on the income of both the claimant and the partner, and is assets tested.

To qualify for Parenting Payment, a person must:

- care for a dependent child or children aged under 16 years;
- have income and assets under certain amounts; and
- have been an Australian resident for at least two years, or be a refugee, or have become a lone parent while an Australian resident.

Lone parents may also receive Parenting Payment for a child aged 16 years or more if they receive Child Disability Allowance for this child.

Table 7.11 shows the number of Parenting Payment (single) recipients at June 1995 to 1998, and total expenditure for the financial years ending 30 June 1995 to 1997.

Table 7.12 shows the number of recipients of the Basic and Additional Parenting Payment (partnered) at June 1996, 1997 and 1998 and total expenditure on each allowance for the financial years ending 30 June 1996 to 1997.

**7.11 PARENTING PAYMENT (SINGLE), Number of Recipients**

	Unit	June 1995	June 1996	June 1997	June 1998
Age group (years)					
Under 20	no.	10 205	10 265	10 477	10 478
20–29	no.	105 676	109 334	112 797	114 570
30–39	no.	137 141	144 205	150 652	155 740
40–49	no.	63 830	69 569	75 114	80 626
50–59	no.	7 864	8 606	9 531	10 435
60 and over	no.	225	311	322	437
Males	no.	19 913	21 964	23 920	25 546
Females	no.	305 028	320 326	334 973	346 740
Persons	no.	324 941	342 290	358 893	372 286
Total payments for financial year ending 30 June	\$'000	2 552 272	2 760 105	2 992 322	n.y.a.

Source: Department of Family and Community Services.

**7.12 PARENTING PAYMENT (PARTNERED), Number of Recipients**

	Unit	June 1996	June 1997	June 1998
Non-benefit Parenting Allowance	no.	422 604	425 378	407 345
Benefit Parenting Allowance	no.	237 743	239 488	238 386
<b>Total</b>	<b>no.</b>	<b>660 347</b>	<b>664 866</b>	<b>645 731</b>
Total expenditure(a)	\$'000	2 019 321	2 216 628	n.y.a.

(a) For financial year ending 30 June.

Source: Department of Family and Community Services.

### **Jobs, Education and Training (JET) Program**

The JET Program is delivered to customers by Centrelink on behalf of the Department of Family and Community Services (F&CS); the Department of Education, Training and Youth Affairs (DETYA) and the Department of Health and Aged Care (H&AC). It aims to improve the financial circumstances of eligible F&CS customers by aiding their entry or re-entry into the workforce. It provides structured assistance which includes a return to work plan; information, advice and referrals to government and community services including assistance with finding child care; referrals to education and vocational training; and referrals to Job Network members for job search and assistance. Participation in the JET program is voluntary.

The JET Program is open to all Parenting Payment (single) recipients, Additional Parenting Payment (partnered) recipients, Widow 'B' and Carer Payment recipients, Widow and Partner Allowees, and recipients of Special Benefit who would be eligible for Parenting Payment (single) except for residency requirements. JET encourages participation particularly from three groups of Parenting Payment (single) recipients who earn less than \$150 per week: teenagers; those who have received the payment for more than 12 months and whose youngest child is at least six years old; and those who will lose eligibility for the payment within four years due to their youngest child turning 16 years.

JET participants and certain other students who study full or part-time in approved courses may receive the Pensioner Education Supplement of \$60 per fortnight maximum and an Education Entry Payment of \$200 for each year of study.

### **Child Support Scheme**

The Child Support Scheme is jointly administered by F&CS and the Attorney-General's Department.

The resident parent can apply to F&CS which will assess the amount of child support payable using a formula set out in legislation.

The department can collect child support from liable parents and these payments are distributed to the other parent by Centrelink.

Alternatively, resident parents can collect child support privately, provided that, where they receive the higher rate of Family Allowance, that child support is at least the amount payable under the formula or court order. (Prior to 1 January 1993, clients of the former Department of Social Security were required to have child maintenance payable under court orders or agreements collected by the Agency.)

The largest Family Allowance subgroup (receiving more than the minimum rate Family Allowance) is Parent Payment (single) recipients. At June 1998, 44.1% of Parenting Payment (single) recipients were declaring child support, compared with 26% at the beginning of the Scheme in 1988.

### **Maternity Allowance**

Maternity Allowance was introduced from 1 February 1996. This payment assists families with the costs associated with a new baby (including forgone income as a result of the mother being unable to participate in the paid workforce around the time of the birth of the child). Maternity Allowance is a non-taxable, lump sum payment for each new child to families who meet the Family Payment residence, income and assets tests. It is equal to six times the weekly maximum rate of Parenting Allowance.

From 1 January 1998, Maternity Allowance has been paid in two stages as part of the initiative to boost immunisation rates. A lump sum of \$750 is paid within 13 weeks of the birth of the child and an additional amount of \$200 after the child reaches 18 months upon proof of age-specific immunisation. Families are not disadvantaged in cases where children are not immunised for medical reasons or where parents conscientiously object to immunisation.

## Other payments

### Special Benefit

Special Benefit may be granted to people not qualified for any other income support payment, but who are unable to earn a sufficient livelihood for themselves and their dependants and are in financial hardship. The rate at which Special Benefit is payable is discretionary, but cannot exceed the applicable Newstart Allowance rate. Payment of Special Benefit is subject to an income test, an assets test and an available funds test. The assets test is identical to that applying to Newstart Allowance customers, but both the income test and the available funds test are specific to Special Benefit.

### Rent Assistance (RA)

RA is a non-taxable income supplement paid to Commonwealth income support recipients and low income families who rent in the private market. The aim of RA is to improve housing affordability for people in these groups who face additional costs through paying private rent. The RA program is administered and funded by the Commonwealth through the social security system.

RA is payable to eligible clients of the Department of Family and Community Services, the Department of Veterans' Affairs and the Department of Employment, Workplace Relations and Small Business who rent accommodation in the private rental market and pay rent above minimum threshold levels. Assistance is provided at the rate of 75 cents per dollar of rent paid above these thresholds up to specific maximum rates of assistance. For rents above the level at which the maximum rate is payable, a person pays 100% of additional rent costs. The maximum rates and thresholds vary according to household size and structure.

### Ancillary payments

Ancillary payments provide targeted financial assistance to social security recipients to help them meet expenses associated with a range of specific circumstances. These circumstances include residence in remote areas, having a telephone connected, purchase of pharmaceutical prescriptions, and financial adjustment following the death of a partner, child or care recipient.

Each of the ancillary payments has a different set of qualifications attached. A person's eligibility for any of the ancillary payments depends upon

their prior eligibility for a pension or other social security benefit. Eligibility for these payments is assessed as part of claiming an income support or other social security benefit.

### Concessions

Concessions on the price of a range of essential services are made available in Australia to pensioners and low income groups by the Commonwealth Government (free hearing aids, low cost pharmaceutical prescriptions, reduced postal and telecommunication fees), State and local governments (reductions in household rates, energy bills, public transport fares, motor vehicle registration charges and a wide range of other health, household, transport, educational and recreational concessions) and the private sector (concessions on various goods and services).

Concessions are generally made available on production of a Commonwealth-issued means-tested concession card. Possession of one of these cards is recognised by concession providers at all levels of government and commerce as an indicator that the person is eligible for a relevant concession.

On behalf of F&CS, Centrelink issues the relevant cards to people who receive a means-tested social security payment or otherwise qualify under income testing. The cards are the Pensioner Concession Card, the Health Care Card and the Commonwealth Seniors Health Card.

### International agreements and payment of pensions abroad

Under Australia's social security law, pensions for old age, severe disability and widowhood can usually be permanently paid abroad. Pensions for some other contingencies can be paid outside Australia for periods of up to 12 months, except in New Zealand where the recipient will normally have to apply to the New Zealand Government for a payment.

As at June 1998, Australia was paying more than 52,000 pensions to residents and former residents who were absent from Australia for more than 12 months. Other countries' social security systems were making about 300,000 similar payments to Australian pensioners.

Australia has social security agreements with Austria, Canada, Cyprus, Ireland, Italy, Malta, New Zealand, Portugal, Spain, The Netherlands, and the United Kingdom. The agreements form part of Australia's social security law. They

enhance people's access to social security benefits from the agreement partners and guarantee the payment of those benefits when people move between countries. Australia negotiates social security agreements based on a principle of shared responsibility so that countries in which individuals may have lived and worked, contribute towards social security payments for those individuals. Agreements can also contain provisions to avoid dual coverage. For example, non-resident employees and their employers can be exempted from the requirement to make superannuation guarantee contributions in Australia in return for similar exemptions in the other country.

Negotiations to extend Australia's social security agreement network are under way with Chile, Denmark, Norway, Finland, Germany, Greece, Switzerland and Slovenia.

### Centrelink

Centrelink is a government agency which delivers a range of Commonwealth services to the Australian community. Centrelink is accountable, through its Board, to the Minister for Family and Community Services and the Commonwealth Parliament.

The agency came into existence on 1 July 1997 and was officially launched on 24 September 1997. Centrelink was set up to provide assistance to customers in one place. It provides various services on behalf of a number of departments including the Departments of Family and Community Services; Health and Aged Care; Workplace Relations and Small Business; and some assistance previously available from the former Department of Primary Industries and Energy.

Centrelink's customers include the retired, families, sole parents, the unemployed, the short-term incapacitated, people with a disability, carers, widows, primary producers, students and young people.

Centrelink is an Australia-wide organisation which reaches out to the remotest areas of the country through an extensive national network of Customer Service Centres which provide:

- all services formerly provided by the former Department of Social Security, as well as child care and student assistance payments and services;
- registration and acceptance of all new applicants for income support and employment assistance;

- self-help job search facilities, including access to a national job vacancies database via touchscreens, to photocopiers, telephones and facsimile machines, as well as to computers that people can use to prepare job applications;
- referrals for employment assistance; and
- referrals to specialist labour market assistance services for disadvantaged groups.

Centrelink also offers customers personalised assistance through various specialist services. These include:

- social workers who are available from all Customer Service Centres. They provide assistance to customers with financial, personal or family problems and refer them to relevant community support services;
- the Financial Information Service (FIS), which gives free information to help current and future customers to improve their standard of living by using their own money to the best advantage. FIS Officers are available from most Customer Service Centres;
- Retirement Service Centres which provide a dedicated and 'all of government' approach to providing services to pensioners, self-funded retirees and anyone needing information on how to plan for their retirement years;
- Family Service Centres which are designed to provide a 'one stop shop' for people seeking access to, and information about, Government assistance available to families;
- Youth Teams and Specialist Youth Servicing Units which have been set up to help young people to access educational, labour market, job search, housing, health and general welfare assistance available through government programs and services;
- Centrelink Career Information Centres to provide job seekers with the opportunities to locate and apply for jobs, as well as information to help people decide on, or plan, a career path;
- Centrelink Disability Officers to provide specialist services to customers with a disability and their carers. These staff, located in Centrelink Customer Service Centres, provide recommendations on customers' medical eligibility for assistance and can assist with employment referrals;

- Community Service Officers to help homeless people understand and access assistance available to them. Community Service Officers provide services to customers in hostels, refuges and drop in centres where homeless people gather and feel more comfortable; and
- a number of services to ensure access to Centrelink by people from diverse cultural and linguistic backgrounds. These services include:
  - the Centrelink Multilingual Service, which provides assistance from Multilingual Service Officers, as well as translation and interpreting assistance; and
  - a variety of services for Aboriginal and Torres Strait Islander people, such as help from Indigenous Service Officers, Remote Visiting Teams, a support network for Aboriginal and Torres Strait Islander parents, a Community Agent Program and an Interpreter Service.

Centrelink aims to continually improve its performance by keeping abreast of and using the latest on-line facilities and improved face-to-face, mobile, telephone and interactive services.

## Community support programs of the Department of Family and Community Services

### Family and children's services

#### Family and Children's Services Program

The objective of the Family and Children's Services Program is to improve the quality of life for families and children at home, at work and in the general community.

#### Children's Services Sub-Program

The objective of the Children's Services Sub-Program is to assist families with dependent children to participate in the workforce and in the general community by supporting the provision of affordable, quality child care. Assistance is available under the Sub-Program to improve the choice, affordability, supply and quality of child care. These aims are being achieved as follows.

The number of funded child care places increased from 306,500 in June 1996 to 399,000 places in June 1998. These comprise 51,500 community long day care places,

143,100 private long day care places (including employer and non profit centres), 63,300 family day care places, 5,000 occasional care places, 1,700 multifunctional centre and multifunctional Aboriginal children's service places and 134,400 outside school hours care places (table 7.13).

#### 7.13 CHILD CARE PLACES—June 1998

Type of formal care	Number of places
Long day care community based	51 500
Private centres	129 700
Employer and other non-profit centres	13 400
Family day care	63 300
Occasional centres	3 400
Occasional care neighbourhood model	1 600
Multifunctional services	600
Multifunctional Aboriginal children's services	1 100
Outside school hours care	134 400
<b>Total</b>	<b>399 000</b>

Source: Administrative data from Children's Services System (CSS).

Of the 13,400 additional places funded in 1997–98, 8,900 were for long day care.

The Commonwealth Government assists low and middle income families meet their child care costs through an income-related Childcare Assistance system. Childcare Assistance is a targeted payment to low to middle income families using approved private and community-based services. The income level below which families receive maximum Childcare Assistance is currently \$523 per week and is indexed annually.

At June 1998, an estimated 240,000 low and middle income families using long day care services received assistance with their child care costs through the Childcare Assistance system. It is estimated that 60% of these users receive maximum Childcare Assistance.

A Childcare Rebate is available for work-related child care expenses up to a current ceiling of \$115 per week for one child and \$230 per week for two or more children. At 30 June 1998, there were over 504,000 families and over 62,000 child care providers registered for the Commonwealth Childcare Rebate. The Childcare Rebate has been paid directly to families' bank accounts, in arrears, from January 1998 onwards.



Childcare Assistance payments have been made fortnightly in advance to services based on families' entitlements from January 1998 until January 1999. From 1999, Childcare Assistance is being paid to parents, in arrears, through a Childcare Card, which can be used to pay for care provided in Commonwealth approved child care services.

At 30 June 1998, all long day care centres eligible to receive Childcare Assistance were participating in the Quality Improvement and Accreditation System (QIAS). 78% of services had achieved the standards set down for accreditation and the remainder were progressing through the quality improvement process.

QIAS, administered by the National Childcare Accreditation Council, is underpinned by 52 principles of good quality child care practice. Accreditation decisions are made by the Council on the basis of a self-assessment by the centre of its standard of care in relation to these principles, an external review to validate the self-assessment, and moderation of the results to ensure national consistency. The QIAS is currently under review by the Commonwealth Child Care Advisory Council. The Review will investigate the ways of streamlining the System while supporting its philosophy of systematic quality improvement, meeting children's individual needs, validated by peer review.

The Government addresses access for children with additional needs through funding of Special Services, Supplementary Services (SUPS) and the Special Needs Subsidy Scheme (SNSS). The SUPS program was set up to assist all Commonwealth-funded children's services to include children with additional needs and provide culturally and developmentally appropriate care. The priority groups for the program are children from culturally diverse backgrounds, children with a disability, and children from an Aboriginal or Torres Strait Islander background. In the 1996–97 Budget, the Government provided an additional \$10m per year, from 1 July 1997, for the new SNSS scheme, which was established to enable children with high support needs, particularly children with disabilities, to access appropriate care in mainstream child care services. This funding is targeted at children who would not otherwise be able to participate in child care programs.

Special Services funding supports alternatives to mainstream services for special needs groups in areas where mainstream services are inappropriate or non-existent. Many of these services are targeted to children from an Aboriginal or Torres Strait Islander background and children living in rural and remote areas.

In the 1998 Budget, the Children's Services Program included ongoing funding to provide child care for recipients of unemployment benefits participating in the Commonwealth Government's Work for the Dole initiative. The existing support network, which has been established to assist mainly sole parents under the Jobs, Education and Training program, is being utilised to make the child care arrangements for Work for the Dole participants.

### Family Services Sub-Program

The objective of the Family Services Sub-Program is to support families and people in crisis, with a particular focus on assisting disadvantaged families, children at risk and homeless people.

The Supported Accommodation Assistance Program (SAAP) is a joint Commonwealth and States/Territories program assisting homeless people. Funds are provided to community based and some local government organisations to provide a range of transitional supported accommodation and related support services to assist people who are homeless, or at imminent risk of homelessness, and in crisis, to achieve greater independence. National funding for this program for 1998–99 is \$230m.

\$5.2m has been made available to the Family and Community Services portfolio over the three years to June 2001 through the Commonwealth Government's new national strategy to combat domestic violence, *Partnerships Against Domestic Violence*.

Pilot projects will be established to test innovative service responses to families experiencing domestic violence (\$1.5m) and adolescent boys who are victims of domestic violence and at risk of becoming offenders (\$0.5m). \$3.2m is to be dedicated to the continuation and expansion of the Domestic Violence Rural and Remote Initiative, an initiative seeking to establish more effective responses to domestic violence in isolated and rural communities.

\$11.2m has also been provided to fund 26 pilot projects across Australia under the Youth Homelessness Pilot Program. The pilot projects are testing innovative early intervention strategies to assist young people at risk of homelessness to re-engage with family, work, education, training and life in the community. Emphasis is on identifying early home leaving and developing family relations approaches which will support young people and their families in the reconciliation process.

The pilot program has been extended to June 1999 to allow the innovative work of pilots to continue while the Government considers the final report of the Prime Ministerial Youth Homeless Taskforce on a broad and ongoing response to the needs of young homeless people and their families.

The Emergency Relief Program, funded by the Commonwealth Government, is administered by a variety of community, welfare and religious organisations. Funds are distributed to some 1,200 outlets and agencies to assist people in financial crisis. Funding for 1998–99 is nearly \$24m.

The 1998 Commonwealth Budget allocated an additional \$4.3m over four years to support the Commonwealth's continuing commitment to the prevention of child abuse and the support of parents, bringing the total allocation to the year 2002 to \$12m.

Funding will ensure the continuation of initiatives previously introduced including:

- the National Council for the Prevention of Child Abuse to continue its role in providing advice to Government on preventing child abuse and strengthening families;
- the National Child Protection Clearing House to continue collecting and disseminating information on child protection issues to policy makers, researchers, service providers and others who work in the area, or have an interest in these issues;
- extending the 'Good Beginnings' pilot parenting project until November 1999 to enable it to be fully evaluated and secure corporate sponsorship to spread Good Beginnings home visiting programs throughout Australia; and

- continuation of the coordination of the National Plan of Action Against Commercial Sexual Exploitation of Children, in conjunction with State and Territory Governments and non-government organisations.

Funding will also ensure a range of innovative work to strengthen and reinforce these initiatives. The focus will be on activities which support parents in their parenting role and increase community awareness of the consequences of child abuse and neglect.

Over \$3.5m per annum is distributed to about 90 sponsors throughout Australia under the Youth Activities Services Program to offer innovative outside school hours programs of structured activities and positive peer supports for young people aged 11 to 16 years in disadvantaged areas. An additional \$2m per annum is distributed to over 80 of these sponsors for the employment of part-time family support workers (Family Liaison Workers), to support families with adolescent children.

Family and Community Networks is a new initiative which provides \$8.6m over four years for strategies to assist families to access the information about the family services they need. A number of community based pilot projects will test strategies to build effective, ongoing local or regional networks of support for families. These projects will use technology such as the Internet to assist in providing information on the programs and benefits available to families.

This initiative will also provide a platform for developing closer technology-based links between the different levels of government working to make such technology an effective tool to ensure nationally consistent policies relating to families. This initiative will support and establish links between services across a number of sectors, including all levels of government and non-government organisations.

Business and Community Partnerships is another new initiative which provides \$13.4m over four years to enhance linkages between the corporate and community sectors. It underpins the Government's belief that by working together, business, community and government organisations will be more effective in their efforts to strengthen families and support sporting, cultural, educational, research and community welfare activities.



The initiative is designed to encourage businesses and communities to form strategic partnerships with each other and the Commonwealth Government with the aim of ensuring that corporate generosity is used to generate social capital.

## Disability programs

### People with a disability

The *Disability Services Act 1986* was introduced to expand opportunities for the participation of people with disabilities in the Australian community. Under the Act, the Commonwealth Government provides grants for the provision of services to support people with disabilities, particularly in the labour market. Disability Programs promote participation and choice in work and community life by people with disabilities.

Under the Commonwealth/State Disability Agreement, the Commonwealth has responsibility for the provision of employment services for people with disabilities. The Commonwealth also provides funds to assist the States and Territories in the planning, policy setting and management of accommodation and other related services for people with disabilities. Areas such as advocacy and research and development continue to be a responsibility of both levels of government.

Disability employment assistance takes account of the differing circumstances, needs, aspirations and abilities of each person with a disability. Specialist employment services assist people with disabilities with job search and job placement and provide individualised on-the-job training and support.

The Commonwealth Government is exploring options for improving the delivery of specialised employment assistance for people with disabilities. From 1 July 1998, improved referral processes were introduced to better target assistance and improve the choices for job seekers through the introduction of nationally consistent eligibility assessment arrangements.

In 1994, the Commonwealth Disability Strategy was adopted as a ten-year policy and planning framework for Commonwealth government departments and authorities, to improve access to their programs, services and facilities for people with disabilities.

The Strategy was adopted in response to the *Commonwealth Disability Discrimination Act 1992* which makes discrimination on the grounds of disability unlawful in relation to employment, education, accommodation, transport and the provision of goods and services.

In 1998, the Strategy is being evaluated taking into account government policy objectives and the structural and functional changes that have occurred in the management of many portfolios.

### Hearing Services Program

The role of the Hearing Services Program is to purchase services for people with a hearing impairment. The administration of the Hearing Services Program is the responsibility of the Office of Hearing Services (OHS), a Branch within the Department of Family and Community Services.

OHS provides access to hearing services for eligible adults through the Hearing Services Voucher System. Eligible adults include holders of Pensioner Concession Cards, holders of Repatriation Health Cards issued for conditions that include hearing loss, Commonwealth Rehabilitation clients and serving Defence personnel. OHS purchases hearing services from accredited public and private sector providers.

More than 110 accredited providers are contracted by the OHS to provide services under the Hearing Services Voucher System. Services are provided at more than 300 permanent and 1,000 visiting sites throughout Australia by qualified practitioners (audiologists and audiometrists).

In addition, OHS funds Australian Hearing Services to provide specialised hearing services for children and young adults up to the age of 21 years and their families. OHS also funds Australian Hearing Services to ensure access to appropriate hearing services for eligible adults with special needs, including those who live in rural and remote locations, who are Aboriginal or Torres Strait Islander people, or who have complex hearing needs. Funding is also provided to Australian Hearing Services to undertake research to increase understanding of issues related to hearing loss, hearing rehabilitation and the harmful effects of noise.

## Activity patterns of people with a disability or who are principal carers

The time spent on different activities by people in the community depends on many factors, including their family and other responsibilities and their participation in education and the labour force. People with a disability, or those looking after someone with a disability, spend their time in different ways when compared to the general population.

### People with a disability

People in the 15–64 years age group with a disability spent over 30% less time on education and employment activities than people without a disability. Those who have a moderate to profound restriction (having difficulty or needing help with self-care, mobility or communication) spent considerably less time than others in this age group. They spent an

amount of time sleeping which was similar to that spent by people with lesser or no disability.

People with a disability used more time for personal care activities, such as bathing, dressing, eating and getting ready to go out. The average time spent on personal care for persons with a moderate to profound restriction was 20 hours per week, compared with 18 hours for those with a lesser disability and 16 hours per week for persons without a disability. Household work also took up more of their day. This could be because their restriction makes it more difficult for them to do tasks or simply because they have more time available. Social and leisure activities such as reading, relaxing and watching television, occupied more time for people with a disability. Even though a high proportion of the population aged 15–64 years sometimes or always felt rushed, people with a disability were less likely to feel this pressure.

#### 7.14 AVERAGE TIME SPENT BY ALL PERSONS PER WEEK, Age by Disability Status and Carer Status

	Sleeping hours	Other personal care hours	Employment and education hours	Household work hours	Social and leisure hours	Sometimes to always feels rushed %
<b>15–64 YEARS</b>						
Disability						
Moderate to profound restriction	60.6	20.1	15.4	30.1	41.3	66.8
Other	60.1	17.5	23.8	27.7	38.1	70.2
Total	60.2	18.1	21.9	28.2	38.8	69.5
No disability	60.2	16.0	31.9	25.3	34.1	78.4
Principal carer	58.1	17.5	14.1	44.1	33.7	82.3
Not principal carer	60.2	16.5	30.0	25.4	35.3	76.1
Mothers with child (aged under 15)	58.4	15.7	14.9	50.3	27.9	89.1
<b>Total</b>	<b>60.2</b>	<b>16.5</b>	<b>29.5</b>	<b>26.0</b>	<b>35.2</b>	<b>76.2</b>
<b>65 YEARS AND OVER</b>						
Disability						
Moderate to profound restriction	61.7	25.9	**0.1	24.1	55.4	25.6
Other	59.9	22.8	1.4	31.7	51.0	32.1
Total	60.4	23.6	1.1	29.8	52.1	30.5
No disability	60.4	21.5	2.9	33.7	48.9	38.4
Principal carer	59.2	18.7	**4.1	39.1	44.6	56.2
Not principal carer	60.4	22.9	1.7	31.0	51.1	32.7
<b>Total</b>	<b>60.4</b>	<b>22.8</b>	<b>1.8</b>	<b>31.3</b>	<b>50.9</b>	<b>33.5</b>

Source: Unpublished data, Time Use Survey, 1997.

As most of the people in the 65 years and over age group were retired, time spent on employment and education was quite small, while time devoted to personal care was higher. This group put more hours into housework than younger people, and time spent on personal care and on leisure activities was also greater. People with disabilities spent more time on personal care and leisure activities than others in the age group and spent less time on household work. For people aged 65 and over, a smaller proportion of all groups felt rushed, and again the proportion was lower for people with disabilities.

### Principal carers

People with disabilities often need help and support to undertake the tasks associated with daily living. Family members were the main providers of help or informal care needed by people with moderate to profound restriction living in households. The person providing

most of the informal care, the principal carer, lives in the same household in the majority (72%) of cases. The extra care the principal carer provides is reflected in more household work and less sleep. Carers aged 60 and over spend 26% more time, and younger carers 74% more time, on household work than non-carers.

Principal carers aged 15–64 years spent on average less than half the time on employment and education activities than others in that age group. Having responsibility for the care of children or adults who need assistance or supervision, limits involvement in paid work. In this they were similar to mothers of young children (aged under 15). Some carers undertake both roles. For example, 39% of principal carers under 65 are mothers of young children and 29% are caring for young children with a disability. Principal carers are more likely to feel rushed than those who are not principal carers, but not as much as mothers of young children.

## Aged care programs of the Department of Health and Aged Care (H&AC)

### Residential Aged Care Program

The aim of the Commonwealth Government's Residential Aged Care Program is to enhance the quality of life of older Australians through support for the provision of a cohesive framework of high quality and cost effective care services for frail older people.

The H&AC advertises for organisations to provide care in particular geographical areas and for special needs groups.

Recurrent funding is available for each person in a residential care setting. The funding depends on care needs of the resident. Each facility which provides care needs to meet specific care standards and, from the beginning of the year 2000, will need to be accredited by the Aged Care Standards and Accreditation Agency to continue to receive Commonwealth Government funding.

Table 7.15 shows Commonwealth expenditure on nursing homes and hostels in 1997–98, and table 7.16 shows the number of beds and places in nursing homes, hostels and 'new services' at 30 June 1998.

### Community Aged Care Packages

Community Aged Care Packages provide personal care services for people in the community with complex needs who would otherwise require entry to long-term residential care. All prospective recipients must be assessed as eligible for services by Aged Care Assessment Teams. Service providers use a case management approach to develop and monitor care delivery to the older person.

For 1998–99, there were 10,046 places available under the Community Aged Care Packages Program, at a recurrent cost of \$84.1m.

In addition to general Community Aged Care Packages in 1997–98, the Commonwealth provided funding for 1,015 Housing Linked Care Packages which target clients in secure rental accommodation.

### Aged Care Assessment Program (ACAP)

ACAP is a joint Commonwealth-State program introduced in 1986. The aim of ACAP is to ensure that frail aged people have access to available residential care and community care services appropriate to their needs, through the operation of multidisciplinary Aged Care Assessment Teams (ACAT).

**7.15 COMMONWEALTH EXPENDITURE ON NURSING HOMES AND HOSTELS—1997–98**

	NSW	Vic.	Qld	SA	WA	Tas.	ACT	NT	Aust.
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Nursing homes (recurrent)	885.4	546.3	331.7	209.0	168.6	70.3	17.4	7.1	<b>2 235.8</b>
Hostels (recurrent)	193.2	148.3	126.4	64.7	52.0	14.0	7.1	2.0	<b>607.7</b>
Nursing homes and hostels (capital)	12.5	11.9	5.0	2.7	4.7	1.9	0.1	1.0	<b>39.7</b>

Source: Department of Health and Aged Care.

**7.16 BEDS/PLACES IN NURSING HOMES, HOSTELS AND 'NEW SERVICES'—June 1998**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	no.	no.	no.	no.	no.	no.	no.	no.	no.
Nursing homes	474	442	209	158	110	53	7	7	<b>1 460</b>
Approved nursing home places	28 990	17 346	12 066	6 923	5 795	2 150	211	604	<b>74 085</b>
Hostels	467	381	268	151	171	50	8	15	<b>1 511</b>
Approved hostel places	20 015	16 434	12 662	6 430	5 916	1 560	149	816	<b>63 982</b>
'New services'	14	25	6	4	3	2	0	0	<b>54</b>
Approved 'new service' places	566	755	254	101	88	22	0	0	<b>1 786</b>

Source: Department of Health and Aged Care.

Throughout Australia, a network of 121 ACATs operate according to Commonwealth guidelines. In addition, each State has an evaluation unit which monitors and evaluates the performance of the program. The Commonwealth provides grant funding to State health authorities which manage the program on a day-to-day basis. The State health authorities also contribute additional resources to the operation of ACATs and evaluation units. The Commonwealth Government contributed \$36m to this program in 1997–98.

ACATs operate on a regional basis and their structure is influenced by the requirements of the community in which they function. The Teams' responsibilities include holistic assessment of clients, approval of clients to receive residential aged care or Community Aged Care Packages, appropriate referral to other community services, and further assistance for older people through advice about aged care services in general. ACATs are also well positioned to act as an interface between aged care services and the health care system.

A number of ACATs are funded by the Commonwealth either as budget holders to deliver these pilot projects, or to work closely with project managers to provide these services to their clients.

### **Assistance with Care and Housing for the Aged (ACHA) Program**

The ACHA Program was established in the 1993–94 Budget to assist frail, low-income older people who are renting, are in insecure/inappropriate housing or are homeless, to remain in the community by accessing suitable housing linked to community care.

The Commonwealth contributes recurrent funds to organisations that provide support through paid workers and/or volunteers, assisting clients to access and be maintained in secure and affordable housing. The primary role of program workers is to link clients to appropriate mainstream housing and or care services.

In 1998–99, the program will fund 46 projects nationally from an allocation of \$2.4m. The funding for each project varies according to identified community need, the number of staff employed by individual services and the tenure of employment (i.e. full-/part-time). Most projects are located in inner city areas where there is a concentration of frail elderly people living in insecure accommodation.

### **Services provided by the Department of Veterans' Affairs**

Services to veterans are determined by the Repatriation Commission. The Department of Veterans' Affairs provides the administrative machinery through which the Commission operates. The Commission, comprising three full-time members, has functions which include:

- granting pensions, allowances and other benefits in accordance with the provisions of Repatriation legislation;
- arranging the provision of treatment and other services for eligible persons;
- advising the Minister, and providing the Minister with information on matters relating to Repatriation legislation;
- performing other functions conferred on the Commission by the Act or other Acts; and
- administering the Acts subject to the control of the Minister.

Repatriation benefits are provided under the *Veterans' Entitlements Act 1986* in respect of service with the Australian Defence Forces in World War I, World War II, the Korean and Malayan operations, the Australian contingent of the British Commonwealth Far East Strategic reserve, in Vietnam and South East Asia, and for service in the Regular Defence Forces on or after 7 December 1972. Since 6 April 1994, however, peacetime service is covered through the Military Compensation Scheme under the *Safety Rehabilitation and Compensation Act 1988*.

Certain civilians may also be eligible for benefits, as are Australian members of certain designated peacekeeping, observing and monitoring forces who had peacekeeping service overseas and, from July 1994, Australian mariners of World War II. Under the *Papua New Guinea (Members of the Forces Benefits) Act 1957*, indigenous inhabitants of Papua New Guinea who served in the Australian forces in World War II, and members of the Royal Papuan Constabulary and New Guinea Police Force who served in that conflict, are eligible for compensation-type benefits. Members of other Commonwealth countries' forces and other allied veterans are not eligible for compensation-type benefits in respect of their service, unless they were domiciled in Australia immediately before their enlistment. They may, however, qualify for income support payments such as the service pension.

Qualification for receiving subsidised housing loans, granted under the *Defence Service Homes Act*, generally depends on service with the Australian Defence Forces in World War I, World War II, or specified service in Korea, Malaya, South East Asia, Namibia, or the Middle East in respect of the Kuwaiti crisis, and for service in the Regular Defence forces on or after 7 December 1972, provided the person's first service in the Forces was before 15 May 1985. Certain civilians may also be eligible.

More detailed information on repatriation allowances, benefits and services is available from the Department.

### Compensation Program

The principal objective of the Compensation Program is to compensate veterans and their dependants for the effects of war or defence service. Compensation is administered under four sub-programs—the Compensation Sub-program, the Income Support Sub-program, the Housing Sub-program and the Veterans' Review Board.

### Compensation Sub-Program

The main benefits provided under this sub-program are the Disability Pension and the War/Defence Widow's/Widower's Pension and ancillary benefits. Table 7.17 shows the number of pensions at 30 June 1995 to 1998.

The Disability Pension is a compensatory payment for incapacity due to eligible war, defence or peacekeeping service. Table 7.18 shows the number of disability pensioners at 30 June 1998. General rate disability pensions range from 10% up to and including 100%, depending on the degree of war-caused or defence-caused incapacity. Higher rates of pension (intermediate rate and special rate) are payable if:

- there is at least 70% incapacity due to war, defence-caused injury or disease; and
- the veteran is totally and permanently incapacitated from accepted disabilities alone; and

**7.17 DISABILITY AND WAR WIDOWS' PENSIONS—30 June**

	1995	1996	1997	1998
Recipient	no.	no.	no.	no.
Veterans	157 298	159 178	160 145	161 829
Wives and widows	79 656	74 725	69 858	65 442
Children	6 181	5 176	4 247	3 752
War widows and widowers	88 980	93 456	97 522	100 746
Orphans	474	470	459	420
Other dependants	585	547	512	481
<b>Total</b>	<b>333 174</b>	<b>333 552</b>	<b>334 740</b>	<b>332 670</b>

Source: Department of Veterans' Affairs.

**7.18 DISABILITY PENSIONERS—30 June 1998**

	World War I	World War II(a)	Korea/Malaya	FESR(b)	Special overseas service	Peacetime forces	Miscellaneous(c)	Total
	no.	no.	no.	no.	no.	no.	no.	no.
General rate—from 10 to 100%	25	92 187	3 624	713	10 798	24 854	489	132 690
Intermediate rate	0	573	34	4	190	184	1	986
Special rate (TPI or equivalent)	2	10 909	865	188	6 006	3 044	19	21 033
Extreme Disablement Adjustment	2	6 752	186	15	35	72	58	7 120
<b>Total</b>	<b>29</b>	<b>110 421</b>	<b>4 709</b>	<b>920</b>	<b>17 029</b>	<b>28 154</b>	<b>567</b>	<b>161 829</b>

(a) Includes interim forces. (b) Far East Strategic Reserve. (c) Includes service in the Gulf War.

Source: Department of Veterans' Affairs.

- the disabilities render him/her incapable of undertaking remunerative work for periods aggregating to more than 20 hours per week for the intermediate rate, or eight hours for the special rate.

An Extreme Disablement Adjustment, equal to 150% of the general rate, is payable to severely disabled veterans who are 65 years of age or over.

The War/Defence Widow's/Widower's Pension is payable to the widow or widower of a veteran:

- whose death has been accepted as war-caused or defence-caused;
- who at the time of his or her death was receiving or entitled to receive a special rate Disability Pension or the Extreme Disablement Adjustment; or
- who at the time of his/her death was receiving a pension which had been increased due to certain amputations, or amputations and blindness.

From 1 January 1993, the War Widow's/Widower's Pension also became available to the widows/widowers of former prisoners of war.

Orphan's Pension is payable to the children of these veterans.

Table 7.19 shows the number of disability pensions in force at 30 June 1998 and the seven preceding years.

The Veteran's Children Education scheme (see tables 7.20 and 7.21) provides financial help, guidance and counselling to certain students up to 25 years of age. To be eligible a student must be the child of a veteran, an Australian mariner, or a member of the Forces, who is (or has been) in receipt of a Special Rate Disability Pension. Children of former prisoners of war, of veterans, or of Australian mariners whose death has been accepted as war caused, are also eligible.

### 7.19 DISABILITY AND WAR WIDOWS' PENSIONS

Number of disability pensions in force, 30 June					Annual expenditure(a) to 30 June
Year	Incapacitated veterans no.	Dependants of incapacitated veterans no.	Dependants of deceased veterans no.	Total no.	
1991	159 579	108 478	79 494	347 551	1 340 420
1992	157 790	102 953	81 125	341 868	1 396 192
1993	156 923	96 948	83 642	337 513	1 445 308
1994	156 565	91 722	86 224	334 511	1 508 446
1995	157 298	85 837	90 039	333 174	1 570 136
1996	159 178	79 901	94 473	333 552	1 720 239
1997	160 145	74 405	98 493	333 043	1 819 338
1998	161 829	69 484	101 647	332 960	1 888 416

(a) Includes associated allowances.

Source: Department of Veterans' Affairs.

### 7.20 VETERANS' CHILDREN EDUCATION SCHEME, Cost of Education Beneficiaries

Year	NSW(a)	Vic.	Qld	SA(b)	WA	Tas.	Aust.
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1990-91	1 470.3	975.6	1 015.4	459.6	290.4	308.7	<b>4 520.0</b>
1991-92	1 475.8	1 068.2	1 201.6	542.5	289.6	358.8	<b>4 936.5</b>
1992-93	1 612.4	1 092.7	1 198.1	310.1	644.8	413.6	<b>5 271.7</b>
1993-94	1 749.3	1 170.2	1 303.8	348.5	771.6	463.5	<b>5 806.9</b>
1994-95	1 905.7	1 163.9	1 601.4	371.7	791.8	491.8	<b>6 326.3</b>
1995-96	2 401.2	1 399.4	1 877.8	432.8	925.4	553.1	<b>7 589.7</b>
1996-97	2 913.7	1 694.8	2 430.4	522.3	1 135.8	620.7	<b>9 317.7</b>
1997-98	3 535.7	2 071.9	3 024.3	685.2	1 442.3	718.8	<b>11 478.2</b>

(a) Includes the Australian Capital Territory. (b) Includes the Northern Territory.

Source: Department of Veterans' Affairs.



**7.21 VETERANS' CHILDREN EDUCATION SCHEME, Number Receiving Benefits—At 30 June 1998**

	NSW(a)	Vic.	Qld	SA(b)	WA	Tas.	Aust.
Type of training	no.	no.	no.	no.	no.	no.	no.
At school							
Primary(c)	280	166	342	71	166	85	1 110
Secondary	668	353	558	109	270	131	2 089
Total	948	519	900	180	436	216	3 199
Tertiary professional	225	206	214	68	159	43	915
Technical	85	0	87	15	0	12	199
<b>Total</b>	<b>1 258</b>	<b>725</b>	<b>1 201</b>	<b>263</b>	<b>595</b>	<b>271</b>	<b>4 313</b>

(a) Includes the Australian Capital Territory. (b) Includes the Northern Territory. (c) Not in receipt of an education allowance.

Source: Department of Veterans' Affairs.

**Income Support Sub-Program**

The main form of income support paid under this sub-program is the Service Pension. This is an income and assets tested pension similar to the Age and Disability Support Pensions paid by Centrelink. The pension is payable to veterans with qualifying service at age 60. Prior to 1 July 1995, the pension was payable to female veterans with qualifying service at age 55. The Government introduced changes to the minimum age at which a female veteran can be granted Service Pension (Age). The minimum age is lifted from 55 to 60 years in six-monthly increments every two years over the period 1995–2013. This means that the qualifying age for Service Pension (Age) at 1 July 1998 was 56 years. The qualifying age on 1 July 2013 will be the same as for male veterans, that is, 60 years. Veterans with qualifying service may be paid the pension at any age if they are permanently incapacitated for work. Qualifying service generally means service in an area and at a time when danger from hostile enemy forces was incurred by the veteran.

Veterans of other Commonwealth and allied countries may also qualify for the Service Pension for service in wars or war-like conflicts in which Australia has engaged. Veterans of Commonwealth forces must have served outside the country of enlistment or be entitled to the

award of a campaign medal for service within that country. Allied veterans must have service in formally raised forces. The veteran must be an Australian resident with at least ten years residency. Service Pension is also available to Australian, other Commonwealth and allied mariners of World War II.

From 1 April 1993, all service pensioners became eligible for 'fringe benefits', provided by the Commonwealth Government, which include medical and hospital treatment, pharmaceutical benefits and the payment of a telephone allowance.

A number of supplementary benefits are also available under the sub-program. These include:

- rent assistance;
- additional pension in respect of dependent children;
- remote area allowance;
- guardian allowance;
- bereavement payment; and
- pharmaceutical allowance.

Tables 7.22 shows the total number of pensions in force as at 30 June 1998, and Table 7.23 shows the number of pensions and annual expenditure for the years 1991–1998.



**7.22 SERVICE PENSIONS, Number by Category—30 June 1998**

	World War I	World War II	Korea, Malay & FESR(a)	Special overseas service	British Commonwealth	Allied Forces	Other	Total
	no.	no.	no.	no.	no.	no.	no.	no.
Veterans								
Old age	53	128 847	7 569	2 684	23 226	3 996	2 103	<b>168 478</b>
Permanently incapacitated	0	2	622	9 035	163	1 188	4	<b>11 014</b>
Tuberculosis(b)	0	173	5	1	2	0	0	<b>181</b>
Total	53	129 022	8 196	11 720	23 391	5 184	2 107	<b>179 673</b>
Wives and widows	222	98 321	5 868	8 308	20 185	4 483	1 519	<b>138 906</b>
Total	275	227 343	14 064	20 028	43 576	9 667	3 626	<b>318 579</b>

(a) Far East Strategic Reserve. (b) Eligibility on these rounds ceased on 2 November 1978.

Source: Department of Veterans' Affairs.

**7.23 SERVICE PENSIONS, Number and Expenditure**

Pensions in force, 30 June				
	Veterans	Wives and widows	Total	Annual expenditure(a)
Year	no.	no.	no.	\$'000
1991	218 398	159 511	377 909	2 325 077
1992	215 010	156 603	371 613	2 377 619
1993	210 406	152 742	363 148	2 389 886
1994	204 793	148 184	352 977	2 382 307
1995	198 739	148 974	347 713	2 426 579
1996	192 342	145 481	337 823	2 609 460
1997	186 228	142 520	328 748	2 644 118
1998	179 673	138 906	318 579	2 602 122

(a) Includes associated allowances.

Source: Department of Veteran's Affairs.

**Housing Sub-Program (Defence Service Homes Scheme)**

The Defence Service Homes (DSH) Scheme provides financial benefits to recognise the contribution of certain men and women who have served Australia in either peacetime or wartime. The benefits include housing loan interest subsidies, comprehensive home owners' insurance cover at competitive rates, and home contents insurance (see table 7.24).

The Scheme was established in 1918 as the War Service Homes Scheme. In 1972, its name was changed to the Defence Service Homes Scheme to recognise the extension of eligibility to those with qualifying peacetime service.

The Commonwealth Government sold the DSH mortgage portfolio to Westpac Banking Corporation which became the Scheme's lender

on 19 December 1988. Under the Agreement between the Commonwealth and Westpac, the Commonwealth subsidises Westpac for the low-interest loans provided. The subsidy is paid directly to Westpac and represents the difference between the concessional interest rate paid by the borrower and the agreed benchmark interest rate.

Since 1918, the *Defence Service Homes Act* has made provision for DSH insurance. Building insurance is available to all eligible persons, irrespective of whether they have or have had a DSH loan. This benefit is also available to those who obtain assistance under the Australian Defence Force Home Loans Assistance Scheme. On 1 July 1991, DSH contents insurance, a comprehensive insurance package underwritten by Mercantile Mutual Insurance (Australia) Ltd, became available to veterans and the service community.

**7.24 DEFENCE SERVICE HOME SCHEME**

	Unit	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
Subsidised loans								
Loans granted	no.	9 316	9 043	9 158	7 639	7 171	6 861	6 518
Interest subsidy	\$m	139.7	89.3	54.3	37.5	45.1	53.0	29.2
Loan accounts at 30 June	no.	130 000	119 500	113 741	107 124	101 887	96 518	91 029
Building insurance								
Homes insured at 30 June	no.	169 294	163 316	157 510	147 853	140 508	137 012	133 711

Source: Department of Veterans' Affairs.

The maximum loan available under the DSH Scheme is \$25,000 repayable over 25 years. The interest rate on new loans is capped at 6.85% for the term of the loan. Loans can be used to buy a home or strata unit, build or extend a home, buy a right of residence in a retirement village, refinance an existing mortgage, or repair or modify an existing home. Since 1 July 1995, a DSH loan is available to obtain granny flat accommodation on another person's property.

## Health Program

Health care treatment is provided for all disabilities which have been accepted as service-related, and for pulmonary tuberculosis and cancer not related to service. In addition, and subject to certain conditions, health care treatment in Australia is provided for most non-service-related disabilities for: incapacitated veterans receiving disability pensions at or above the maximum (100%) general rate; World War II veterans and mariners receiving both Service Pension at any rate and Disability Pension at 50% rate or higher; veterans, mariners or nurses who served in World War I; veterans who were detained by the enemy; war widows and certain other dependants of deceased male veterans whose deaths have been accepted as service related, and of deceased special rate pensioners; certain service pensioners; and returned servicewomen of World War II.

The needs of the veteran population are changing as veterans and their dependants and carers age. Planning for the delivery of health care services for the veteran community is greatly influenced by the fact that the average age of veterans receiving a benefit is now 73 years. The health program aims to meet their changing needs through increased access to health and community services, especially in rural and remote locations, and strategies to support carers, health care providers and ex-service organisations. Examples of how the

Department is addressing the commitment include:

- Health promotion initiatives—the Department has recognised that health promotion can play a significant part in improving the quality of life of members of the veteran community and help in maintaining their independence. Some initiatives involve links with ex-service organisations and with community organisations such as the Heart Foundation, Diabetes Australia, the Alzheimer's Association and the Australian Sports Commission.
- Health care—the Repatriation Comprehensive Care Scheme is an initiative in veteran health care that was introduced on 1 January 1996. The scheme recognises the complex health needs of the ageing veteran community and the importance of better coordination of care through Local Medical Officers as case managers. The introduction of annual Health Care Plans is pivotal to the new arrangements. The aim of the scheme is to ensure better coordination of care and improved health outcomes for those in greatest need in the veteran community.
- Community and Residential Support Programs—a range of grants programs assist ex-service organisations and community-based organisations to provide assistance and support to the veteran community, both in the wider community and in residential care settings.
- Research and development—health and medical research grants are provided in areas pertinent to the health and wellbeing of the veteran community. Also, research is conducted aimed at providing quality information to support policy analysis.

Younger veterans, from post-World War II conflicts, have identified needs which are additional to those of their older counterparts.

These needs have been addressed by recent initiatives which include integrated outpatient, in-patient and support services for the treatment and rehabilitation of veterans with post-traumatic stress disorder (PTSD). A National centre for war-related PTSD is established in Melbourne, at the former Repatriation Hospital, now the Austin and Repatriation Medical Centre. Intensive in-patient treatment programs are available in each State, supported by the Vietnam Veterans' Counselling Service and individual providers.

Vocational rehabilitation services are available to support those at risk of losing employment, and those who wish to return to the workplace. Rehabilitation Allowance may be available to people whose pension entitlement is affected—the intention is that no financial loss should occur for individuals taking up paid employment. Safety-net arrangements enable return to former pension status in the event that employment cannot be sustained (this applies to pensioners receiving above general rate levels of Disability Pension or Service Pension through invalidity).

With the transfer of the Rehabilitation General Hospitals to the States, or their sale to the private sector, all acute hospital care is now provided through the Repatriation Private Patient Scheme. This means that entitled beneficiaries can obtain treatment at a public hospital as a Repatriation private patient, in shared accommodation with a doctor of their choice. According to medical need, if treatment cannot be provided within a reasonable time, the Department may approve admission to a private hospital. The former Repatriation hospitals will remain available for treatment if beneficiaries choose to go there.

Under arrangements with State Governments, entitled persons requiring custodial psychiatric care for a service-related disability are treated at departmental expense in State psychiatric hospitals.

Entitled persons may also be provided with dental treatment through the Local Dental Officer (LDO) Scheme, which comprised 6,744 LDOs as at 20 September 1998.

Optometrical services, including the provision of spectacles, the services of allied health professionals, as well as a comprehensive range of aids, appliances and dressings, may be provided to entitled persons.

In addition, entitled persons may be provided with pharmaceuticals through the Repatriation Pharmaceutical Benefits Scheme.

### **Vietnam Veterans Counselling Service (VVCS)**

VVCS provides counselling to veterans of all conflicts and their families, as well as working with the ex-service community to promote understanding and acceptance of veterans' problems.

The VVCS is staffed by psychologists and social workers who have specialised knowledge about military service, particularly in Vietnam, and its impact on veterans and their families, especially the impact of post-traumatic stress.

Access to counselling services for rural veterans and their families was greatly improved with the establishment of the Country Outreach Program in 1988, followed soon after by a toll-free 1800 telephone link to all VVCS centres. Recent service enhancement initiatives under the Younger Veterans' Program include the creation of programs aimed at promoting better health for veterans. Table 7.25 shows usage of the VVCS.

**7.25 VIETNAM VETERANS COUNSELLING SERVICE**

	1993–94	1994–95	1995–96	1996–97(a)	1997–98(a)
Type of counselling	no.	no.	no.	no.	no.
Face-to-face consultation	38 492	33 996	33 411	30 000	30 000
Group session consultation	308	356	724	784	500
Country outreach consultation	16 861	20 398	20 723	21 523	27 000

(a) Estimates.

Source: Department of Veterans' Affairs.

## **The Office of Australian War Graves**

The Office of Australian War Graves has two main functions. Its major area of responsibility is the implementation of government policy for the perpetual commemoration of eligible Australian veterans whose post-war deaths are related to their war service.

It also maintains, on behalf of the Commonwealth War Graves Commission, War Cemeteries and other commemorations in Australia, Papua New Guinea, Solomon Islands (Guadalcanal) and Norfolk Island.

The Office maintains 19,520 war graves in 76 war cemeteries and 900 civil cemeteries. It also maintains over 200,000 post-war

commemorations. In 1996–97, the Office commemorated 7,238 veterans who died of war-related causes.

The Office provides an information service to those wishing to visit any of the 102,000 Australian war dead who are buried or for whom memorials have been erected in Australia and overseas. The Office has records relating to the Commonwealth war dead of both World Wars, as well as the Australian dead of the post-World War II conflicts in which Australia has been involved.

Full details of the operations of the Office of Australian War Graves are contained in its Annual Journal.

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# Older Australians

## Introduction

Australia's population is ageing and this is expected to continue for at least the next 50 years. In 1997, the proportion of the population aged 65 and over was 12%, compared with 8% in 1946. This older population is projected to increase to 24% by 2051. Transition to older age is often accompanied by substantial changes to people's health, living arrangements and financial circumstances. Yet there is increasing recognition that older people make a large and positive contribution to community, family and society. The United Nations has designated 1999 as International Year of Older Persons and has adopted as its focus the five principles of independence, participation, care, self-fulfilment and dignity.

## Demographic characteristics

In 1997, 2.2 million Australians were aged 65 years and over (table S2.1). More than half of these were aged 65–74 years (58%) while 10% were aged 85 years and over. A higher proportion of those aged 65 and over were women and this trend increased with age. More than twice as many women as men were aged 85 years and over.

## Growth of the older population

In 1871, less than 2% of the Australian population were aged 65 years and over. Older people constituted 4% of the total population by

the turn of the century, and remained at around that percentage throughout the period prior to and including World War I (graph S2.2). In 1946, the proportion of older men in the population was 7%, and that of older women was 9%.

The ageing of the population is the result of improved life expectancy throughout this century, so that more people survive past 65 years of age. Changes in the proportion of people aged 65 and over are also affected by high fertility, which produces growth in younger age groups. Most notably, after World War II the growth in the proportion of older people slowed because of the post-war baby boom. By 1996, the proportions of men and women aged 65 and over were 11% and 14% respectively. Substantial growth is projected in both the relative and absolute size of the older population over the next fifty years. By 2051, 22% of men and 26% of women (6 million people) are expected to be aged 65 years and over.

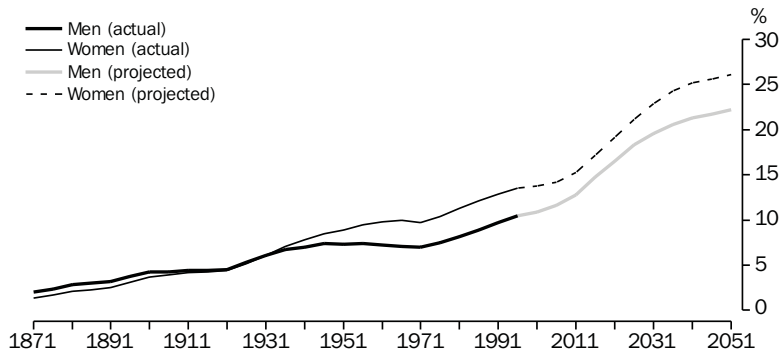
The Australian population has not aged at the same rate for men and women. This is in line with the growing difference between male and female life expectancy evident since the 1930s. Before this time, there was a slightly higher proportion of men than women aged 65 and over. This can be attributed to the gap in the sex ratio from colonial times when men of any age vastly outnumbered women. By the turn of the century the sex differential had closed for the younger age groups, but still had some impact on the older cohorts.

S2.1 PERSONS AGED 65 YEARS AND OVER—1997

	Men		Women		Persons	
	'000	%	'000	%	'000	%
Age						
65–74	616.5	6.7	679.3	7.3	1 295.8	7.0
75–84	298.8	3.2	434.3	4.7	733.2	4.0
85 and over	65.3	0.7	150.8	1.6	216.1	1.2
Total	980.6	10.6	1 264.4	13.6	2 245.1	12.2
All ages	9 218.0	100.0	9 314.2	100.0	18 532.2	100.0

Source: Population by Age and Sex, Australian States and Territories (3201.0).

## S2.2 PROPORTION OF THE POPULATION AGED 65 YEARS AND OVER



Source: Census of Population and Housing: Estimated Resident Population; and Population Projections.

## International comparisons

Australia's ageing population structure is part of a trend common throughout the developed world where fertility and mortality are declining. Proportions of older people in the population for Australia, Canada, New Zealand and USA (all around 12–13%) have been lower than, for example, in Sweden, Italy and the UK (16–17%) (table S2.3). Countries such as Malaysia and Indonesia have had low proportions of older people due to comparatively high fertility and mortality rates. Most nations have had more older women than older men.

## Living arrangements

People aged 65 and over represent a group with a diverse range of needs and social resources. This is reflected in patterns of living arrangements. Most older people live with other family members or by themselves, and only a small proportion live in health establishments. However, there are differences in the living arrangements of people in their 60s compared with those in their 90s. These differences are illustrated in table S2.4.

## S2.3 INTERNATIONAL COMPARISONS OF OLDER PEOPLE

Country	Year	Aged 65 and over		
		'000	% of total population	% female
<b>Australia</b>	<b>1995</b>	<b>2 154.3</b>	<b>11.9</b>	<b>56.5</b>
Canada	1994	3 472.5	11.9	57.9
China	1990	62 993.4	5.6	54.5
France	1993	8 360.4	14.5	60.3
Greece	1994	1 582.1	15.2	55.6
Hong Kong	1995	590.1	9.5	54.7
India	1993	37 392.0	4.2	49.5
Indonesia	1995	7 905.6	4.1	53.5
Italy	1994	9 302.3	16.3	59.1
Japan	1994	17 586.0	14.1	59.0
Malaysia	1993	751.9	3.9	54.1
Netherlands	1994	2 020.8	13.1	60.0
New Zealand	1992	394.6	11.5	57.4
Papua New Guinea	1990	91.2	2.4	48.4
Sweden	1994	1 540.1	17.5	57.6
United Kingdom	1994	9 185.8	15.7	59.6
United States of America	1995	33 532.3	12.8	59.2
Vietnam	1992	3 490.6	5.0	58.5

Source: United Nations, 1995 Demographic Yearbook, New York, 1997.

**S2.4 PEOPLE AGED 65 YEARS AND OVER(a), Living Arrangements By Age—1996**

Living arrangements	Units	Age group (years)							Total
		65–69	70–74	75–79	80–84	85–89	90–94	95 and over	
In private dwelling									
With partner only	%	55.5	52.8	44.5	31.9	18.7	8.5	4.7	<b>45.8</b>
With other family	%	20.8	16.7	15.1	15.2	16.2	16.3	15.6	<b>17.4</b>
With unrelated persons only	%	2.1	1.9	1.7	1.4	1.2	0.9	1.3	<b>1.8</b>
Lone person	%	20.1	26.1	33.1	38.3	36.5	26.7	17.0	<b>27.8</b>
Total in private dwelling	%	98.5	97.4	94.4	86.8	72.6	52.5	38.6	<b>92.8</b>
In non-private dwelling									
In health establishment									
Nursing home	%	0.5	1.1	2.6	6.1	12.8	24.3	36.1	<b>3.4</b>
Accommodation for the retired/aged (cared)	%	0.4	0.8	2.2	6.1	13.1	21.0	22.2	<b>3.0</b>
Other health establishment	%	0.2	0.3	0.4	0.6	1.1	1.7	2.3	<b>0.4</b>
Total in health establishment	%	1.1	2.2	5.2	12.8	27.0	47.0	60.6	<b>6.8</b>
In other non-private dwelling	%	0.5	0.4	0.4	0.4	0.4	0.5	0.8	<b>0.4</b>
Total in non-private dwelling	%	1.5	2.6	5.6	13.2	27.4	47.5	61.4	<b>7.2</b>
Total	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>
Total aged 65 years and over	'000	612.6	539.8	385.0	258.8	128.7	44.8	12.6	<b>1 982.3</b>

(a) Enumerated at home.

Source: Unpublished data, 1996 Census of Population and Housing.

In 1996, 46% of older people lived only with their partner, 17% lived with their partner and children or with other family members, 28% lived alone, and 7% lived in health establishments.

As people age, the likelihood of living with a partner decreases and the likelihood of living in an establishment increases. In 1996, 56% of 65–69 year olds lived with their partner only and less than 1% lived in a health establishment. In contrast, 5% of people aged 95 and over lived with their partner only and 61% lived in a health establishment. Most older people who lived in a health establishment were in nursing homes or cared accommodation for the retired or aged (94%). The move to health establishments reflects the increased likelihood of disability associated with ageing.

The percentage of older people living alone also differed by age. The proportion of 65–69 year olds living alone was 20%, increasing to 36% among those aged 85–89. The transition to living alone occurs mainly because one partner dies. Of those aged 95 and over, the proportion of lone persons decreased, reflecting that many people live with their adult children or in health establishments by this age.

### How older Australians use their time

In general, today's older people are healthier, have greater physical and financial independence than earlier generations, and have time for a range of activities not previously practicable. Retirement from the paid workforce and a change in other commitments means that older people's time use also differs substantially from time use in younger age groups.

Older people devote few hours to employment or education activities. In 1997, those aged 65 and over spent an average of two hours a week on employment activities compared with an average of 26 hours spent by those aged 15–64 (table S2.5).

The activities which were major consumers of time among older people included: personal care, domestic activities, recreation and leisure. Average time spent on personal care activities, which included sleeping, eating, drinking and health care, was greater among older people (83 hours a week) than among those aged 15–64 (77 hours a week). Older people spent an average of eight hours a week more on domestic activities (23 hours a week) than younger people (15 hours a week). Much of this time comprised housework tasks such as washing, ironing, cleaning and tidying up.



**S2.5 AVERAGE TIME SPENT ON MAIN ACTIVITIES, By Age**

	Age group (years)		
	15–64	65 and over	All persons aged 15 and over
Main activities	hours per week	hours per week	hours per week
Personal care	76.7	83.2	77.6
Employment	26.0	1.8	22.9
Education	3.5	0.0	3.0
Domestic activities			
Housework	9.9	14.1	10.5
Other household work	4.9	8.4	5.4
Total domestic activities	14.8	22.5	15.9
Child care	4.1	0.5	3.6
Purchasing	5.1	5.7	5.3
Voluntary work/care			
Support for adults	0.4	0.4	0.4
Unpaid voluntary work	0.6	1.3	0.7
Total voluntary work/care	2.3	3.4	2.6
Social interaction	5.4	4.9	5.3
Recreation/leisure	29.5	45.2	31.6
<b>Total(a)</b>	<b>168.0</b>	<b>168.0</b>	<b>168.0</b>

(a) Includes undescribed activities.

Source: Unpublished data, 1997 Time Use Survey.

Time available for leisure is relatively high for older people because of low levels of labour force participation. On average, older people spent considerably more time on recreation and leisure activities (45 hours a week) than people aged 15–64 (30 hours a week). Much of this time was spent on passive leisure activities such as reading, watching television and relaxing.

### Caring and community activities

A substantial contribution is made by older people to voluntary work and caring activities, including child care. These activities not only meet needs within the family and community, but also provide benefits to older people themselves in terms of personal satisfaction. In 1997, the average time spent by those aged 65 and over on unpaid voluntary work for community organisations, caring for adults and helping or doing favours for family and friends was greater than that spent by people in younger age groups (three hours and two hours a week respectively). Older people spent a greater proportion of this time on unpaid voluntary work.

Across all people aged 65 and over, the average time spent on child care activities was half an hour a week, reflecting the fact that few older

people are the primary carers of young children. Five per cent of older people spent a considerable amount of time—an average of 11 hours a week—on child care activities. Often this was informal care for grandchildren. Grandparents provided care in almost 70% of households which received informal care for a child aged 11 and under.

### Older volunteers

In the 12 months to June 1995, almost 350,000 older volunteers gave their time to organisations and groups (table S2.6). The median time that women aged 65 and over spent in voluntary work was 108 hours, compared with 72 hours by those aged 15–64. The median time that older men gave to voluntary work was also greater than given by younger men—104 and 72 hours respectively.

Welfare and community organisations attracted the highest levels of volunteering among older people (51%), comprising almost half the hours devoted to these organisations (42%). Older people were also more likely than younger people to be involved in religious organisations (23% of volunteers aged 65 and over), health organisations (12%), and arts/culture groups (6%).

**S2.6 VOLUNTEERS, FIELD OF VOLUNTARY WORK AND HOURS WORKED BY AGE—1995**

	Age group (years)					
	15–64		65 and over		Total	
	Persons	Hours	Persons	Hours	Persons	Hours
Field of voluntary work	%	%	%	%	%	%
Sport/recreation/hobby	33.3	26.7	18.9	14.0	31.4	24.5
Welfare/community	26.5	20.9	51.3	42.4	29.7	24.7
Health	6.2	4.5	11.6	10.7	6.9	5.6
Emergency services	5.3	4.1	2.1	0.7	4.9	3.5
Education/training/youth development	28.4	16.6	5.2	3.8	25.3	14.3
Religious	16.8	16.0	23.4	18.8	17.7	16.5
Environmental/animal welfare	3.9	3.2	2.7	1.8	3.7	2.9
Business/professional/union	3.5	2.1	1.5	*0.8	3.3	1.8
Law/justice/political	1.7	1.0	1.1	*0.3	1.7	0.9
Arts/culture	3.8	3.5	5.9	4.3	4.1	3.6
Foreign/international	0.8	0.5	0.7	*0.8	0.8	0.6
Other	1.3	1.0	3.0	1.8	1.5	1.1
Total fields of voluntary work(a)(b)	100.0	100.0	100.0	100.0	100.0	100.0
	'000	Hours (million)	'000	Hours (million)	'000	Hours (million)
All volunteers	2 291.2	356.2	348.3	77.7	2 639.5	433.9

(a) Field of voluntary work was only collected for up to three organisations for each volunteer. Hours worked in organisations not collected were excluded from the total fields. (b) As a volunteer can work in more than one field of voluntary work, the percentages for individual fields of voluntary work add to more than 100%.

Source: Unpublished data, *Survey of Voluntary Work*.

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## Introduction

**H**ousing satisfies the essential needs of people for shelter, security and privacy. Shelter is recognised throughout the world as a basic human right. The adequacy or otherwise of housing is an important component of individual wellbeing. Housing also has great significance in the national economy, with its influence on investment levels, interest rates, building activity and employment.

The ways in which Australian families and individuals are housed reflect social, political and economic factors over the last century. For example, public health concerns towards the end of the nineteenth century resulted in legislation in the States which gave local government the authority to make building regulations and inspect dwellings, a responsibility they have to this day. Also at that time, demand for housing exceeded supply, rents were high, and overcrowding and slum conditions continued to be a problem into the twentieth century. This led to States introducing further legislation for the provision of public rental housing for low income earners. In the 1920s, the Commonwealth moved to provide financial assistance for access to home ownership to moderate and low income groups, and a number of policy initiatives over recent decades have focused on this goal. Governments have continued to actively promote home ownership as part of an overall policy directed at achieving people's self-reliance in housing, and a quality of housing adequate for their needs.

The predominance of separate, free standing houses situated on 'quarter acre blocks' within the mainland capital city areas is a feature of Australian urban development. More recently, governments have moved to promote higher housing densities, to provide greater choice of housing types and to make better use of existing infrastructure. This has resulted in changes to urban planning and building regulation. There have been some changes in the nature of housing, and efficiencies in the use of land and

infrastructure. However, even within this new framework, green field developments and free standing houses still predominate. Households in such developments are still largely reliant on the family car to access many neighbourhood facilities and services.

This chapter provides information on the types of dwellings Australians live in and their tenure arrangements, the affordability of housing and the government assistance provided through housing and income support programs. It is based largely on information from the 1995–96 Survey of Income and Housing Costs, but also draws on house price index data, on data about finance commitments for owner occupation and on administrative data relating to public housing and rent assistance. Care should be taken when comparing statistics from different sources because of differences in the timing, conceptual bases and scope of individual statistical sources.

## Types of dwellings

Table 8.1 shows the number of dwellings of different types in each State and Territory in 1995–96. The table shows that the separate house is the most popular type of dwelling in Australia, making up 79% of all dwellings. Tasmania has the highest proportion of separate houses (83%) and the Northern Territory the lowest (68%). All other States and the Australian Capital Territory are in the range 76% to 81%.

Flats, units or apartments are the next most common type of dwelling in Australia, with 12% of all dwellings falling into this category. New South Wales (with 15%) has the highest proportion of flats, units or apartments, followed by Victoria and the Northern Territory (each with 13%). Tasmania and Western Australia have relatively low percentages of flats, units or apartments (each with 8%).

Semi-detached, row or terrace houses and town houses comprise 8% of dwellings in Australia. South Australia, Western Australia, the Northern Territory and the Australian Capital Territory have more semi-detached housing than flats, units or apartments.

**8.1 NUMBER OF DWELLINGS, By Dwelling Structure and State/Territory—1995–96**

	Separate house	Semi-detached/row or terrace house/townhouse	Flat/unit/apartment	Other	Total
State/Territory	'000	'000	'000	'000	'000
New South Wales	1 732.1	184.2	349.8	(a)20.4	<b>2 286.5</b>
Victoria	1 382.1	101.0	214.8	(a)10.0	<b>1 707.8</b>
Queensland	1 026.0	77.1	142.5	19.9	<b>1 265.5</b>
South Australia	453.2	77.3	56.0	n.p.	<b>587.2</b>
Western Australia	525.5	81.2	55.1	(b)2.9	<b>664.7</b>
Tasmania	155.3	11.8	14.9	(a)4.5	<b>186.4</b>
Northern Territory(c)	32.6	8.2	6.4	n.p.	<b>47.9</b>
Australian Capital Territory	87.4	13.7	11.3	—	<b>112.4</b>
Australia	5 394.1	554.5	850.8	59.2	<b>6 858.5</b>

(a) The estimate has a relative standard error of 25% to 50%. (b) The estimate has a relative standard error greater than 50%.  
(c) Excludes remote and rural areas.

Source: Unpublished data, 1995–96 Survey of Income and Housing Costs.

**Number of bedrooms**

One indicator of dwelling size is the number of bedrooms. In 1995–96, half of all dwellings in Australia had three bedrooms (table 8.2). Of separate houses, 59% had three bedrooms, while two bedroom dwellings were more common in semi-detached houses and flats, units and apartments (50% and 62% respectively).

Over a third (36%) of three bedroom dwellings had only two persons living in them, a further 19% had three persons living in them, and 19% had four persons (table 8.3). About 17% of three bedroom dwellings had only one person living in them.

Information on the incidence of other types of rooms such as bathrooms, toilets, laundries and lounge/dining/family rooms is available from the 1994 Australian Housing Survey.

**8.2 NUMBER OF DWELLINGS, By Dwelling Structure and Number of Bedrooms—1995–96**

	Separate house	Semi-detached/row or terrace house/townhouse	Flat/unit/apartment	Other	Total
No. of bedrooms	'000	'000	'000	'000	'000
Bedsitter	(a)5.8	—	(a)13.8	n.p.	<b>23.0</b>
One bedroom	53.2	67.6	228.3	19.7	<b>368.8</b>
2 bedrooms	704.1	274.8	525.6	19.8	<b>1 524.4</b>
3 bedrooms	3 162.7	197.5	75.7	(a)15.8	<b>3 451.8</b>
4 or more bedrooms	1 468.2	(a)14.5	(a)7.4	n.p.	<b>1 490.6</b>
All dwellings	5 394.1	554.5	850.8	59.2	<b>6 858.5</b>

(a) The estimate has a relative standard error of 25% to 50%.

Source: Unpublished data, 1995–96 Survey of Income and Housing Costs.

**8.3 DWELLINGS, By Number of Persons and Number of Bedrooms—1995–96**

No. of bedrooms	One person %	Two persons %	Three persons %	Four persons %	Five or more %	Total %	Total '000
Bedsitter	(a)63.3	n.p.	—	(b)18.6	—	100.0	<b>23.0</b>
One bedroom	82.5	16.2	n.p.	n.p.	n.p.	100.0	<b>368.8</b>
2 bedrooms	41.5	42.3	10.3	4.4	1.5	100.0	<b>1 524.4</b>
3 bedrooms	17.3	35.5	19.2	19.1	8.9	100.0	<b>3 451.8</b>
4 or more bedrooms	7.6	23.8	15.7	25.5	27.5	100.0	<b>1 490.6</b>
All dwellings	24.2	33.4	15.4	16.2	10.8	100.0	<b>6 858.5</b>

(a) The estimate has a relative standard error of 25% to 50%. (b) The estimate has a relative standard error greater than 50%.

Source: *Unpublished data, 1995–96 Survey of Income and Housing Costs.*

**Tenure****Home ownership and renting**

Australia has a high rate of home ownership. Of the 6.9 million households in Australia in 1995–96, 70% were living in their own home and 28% were renting their dwelling from public or private landlords (table 8.4).

Of those who owned their home, about 60% owned it outright. The remainder were paying off a mortgage or loan secured against their dwelling. The proportion of households who own their home outright has increased progressively (rising from 39% in 1985–86 to 42% in 1995–96) as greater numbers of purchasers pay off their mortgages. This trend

may continue as Australia's population gradually ages. However, the recent increase in the diversity of financial instruments available has meant that increasing numbers of loans, being secured against dwellings, have been taken out for non-housing purposes. This may slow down the future increase in outright home ownership.

Of the 1.9 million households renting their dwellings, 71% were renting privately (from real estate agents and private landlords), while 21% were renting from public housing authorities and the remaining 8% from other landlords.

Around 90% of owners lived in separate houses in 1995–96. Of renter households, 51% lived in separate houses and 31% lived in flats, units or apartments.

**8.4 NUMBER OF DWELLINGS, By Dwelling Structure and Tenure Type—1995–96**

Tenure type	Separate house '000	Semi-detached/row or terrace house/townhouse '000	Flat/unit/apartment '000	Other '000	Total '000
Owner without a mortgage	2 561.1	132.6	139.4	24.6	<b>2 857.7</b>
Owner with a mortgage	1 749.7	90.3	88.1	(a)3.6	<b>1 931.6</b>
Renter					
Public	192.3	94.6	115.4	—	<b>402.3</b>
Private	698.1	202.1	447.5	21.6	<b>1 369.3</b>
Total(b)	979.3	321.3	604.8	27.3	<b>1 932.6</b>
Rent-free	104.0	(c)10.4	(c)18.4	n.p.	<b>136.6</b>
Total	5 394.1	554.5	850.8	59.2	<b>6 858.5</b>

(a) The estimate has a relative standard error greater than 50%. (b) Includes a small number of 'other' landlord types (total 161,000). (c) The estimate has a relative standard error of 25% to 50%.

Source: *Unpublished data, 1995–96 Survey of Income and Housing Costs.*

Almost 34% of households who owned their own home outright were couples with no children. One parent households accounted for 6% of outright owners, and lone person households made up 24% (based on table 8.5).

The majority (81%) of couple households were owners, with only 17% renting. Of one-parent families, 52% were owners, 20% were renting public housing and 24% were renting privately.

Tenure patterns vary across States and Territories. Victoria had the highest proportion of home ownership overall, with 73% of

dwellings either being purchased or owned outright (table 8.6). The lowest rate for home ownership (45%) was in the Northern Territory; the remaining rates ranged from 65% in the Australian Capital Territory to 72% in South Australia. The Australian Capital Territory had the highest proportion of households purchasing their home (38%). In the Northern Territory more than half (51%) of all households rented their home, significantly higher than the national rate of 28%. These differences partly reflect differences in the age and life structures across States and Territories (see section *Life cycle groups*).

### 8.5 TENURE, By Type of Household—1995–96

Type of household	Owner without a mortgage '000	Owner with a mortgage '000	Renter				Total
			Public '000	Private '000	Total(a) '000	Rent-free '000	
Couple only	966.4	379.9	32.0	220.3	270.5	33.1	1 649.8
Couple with dependent children only	468.0	824.5	68.4	248.7	344.7	27.4	1 664.6
Couple—other	447.2	251.6	(b)16.8	51.2	76.9	(b)9.0	784.7
<b>Total couples</b>	<b>1 881.5</b>	<b>1 456.0</b>	<b>117.2</b>	<b>520.1</b>	<b>692.1</b>	<b>69.5</b>	<b>4 099.1</b>
One parent—one family	175.8	124.2	115.3	138.7	278.0	n.p.	582.3
Lone person	692.6	271.2	163.0	417.7	637.4	56.9	1 658.0
Other	107.8	80.2	(b)6.8	292.7	325.2	(b)5.9	519.1
<b>Total</b>	<b>2 857.7</b>	<b>1 931.6</b>	<b>402.3</b>	<b>1 369.3</b>	<b>1 932.6</b>	<b>136.6</b>	<b>6 858.5</b>

(a) Includes a small number of 'other' landlord types (total 161,000). (b) The estimate has a relative standard error of 25% to 50%.

Source: Unpublished data, 1995–96 Survey of Income and Housing Costs.

### 8.6 TENURE, By State/Territory—1995–96

State/Territory	Owner without a mortgage %	Owner with a mortgage %	Renter				Total	Total '000
			Public %	Private %	Total(a) %	Rent-free %		
New South Wales	42.9	25.2	6.5	21.5	29.9	2.0	100.0	2 286.5
Victoria	43.8	29.3	3.4	19.5	24.9	2.0	100.0	1 707.8
Queensland	41.4	27.2	5.2	22.2	29.9	1.5	100.0	1 265.5
South Australia	42.2	29.5	9.6	14.0	26.7	(b)1.6	100.0	587.2
Western Australia	36.1	34.4	4.6	18.6	26.3	3.1	100.0	664.7
Tasmania	41.5	29.0	8.0	14.8	26.9	(b)2.6	100.0	186.4
Northern Territory(c)	20.3	24.3	28.6	16.0	51.2	(b)4.3	100.0	47.9
Australian Capital Territory	26.7	38.0	11.4	20.3	34.4	n.p.	100.0	112.4
<b>Australia</b>	<b>41.7</b>	<b>28.2</b>	<b>5.9</b>	<b>20.0</b>	<b>28.2</b>	<b>2.0</b>	<b>100.0</b>	<b>6 858.5</b>

(a) Includes a small number of 'other' landlord types (total 161,000). (b) The estimate has a relative standard error of 25% to 50%. (c) Excludes remote and rural areas.

Source: Unpublished data, 1995–96 Survey of Income and Housing Costs.



## Household investors in rental dwellings

### Introduction

The private rental market provided housing for about 20% of Australian households in 1995–96. It was the second largest source of housing after home ownership. In size, the private rental market far outweighed the public housing sector, which accommodated 6% of Australian households.

The private rental market provides housing for a wide variety of Australian households. Apart from the low income groups who may not be able to purchase their own homes, rental housing is often a first step to independence for young people who are between stages of living with parents and buying their own home. There are also many other households who live in rental housing by choice.

Private rental housing is provided by a diverse group of residential property owners such as private householders, non-profit institutions, employers and corporations. The largest group, private householders, provided rental housing for about 60% of households who rented in the private market in 1995–96.

### Profile of household investors

In June 1997, about 584,200 income units owned or partly owned residential rental property. These rental investors represented 6.5% of all income units living in private dwellings in Australia (table 8.7). As landlords they constituted a diverse group in terms of their age, income, labour force status and family status. However, certain patterns of investment were distinguishable for different groups.

#### Age

Ownership of investment property increased through the prime working years of reference persons in income units. About 4% of income units with the reference person aged 18–34 years were investors, increasing to 9% of those where the person was aged 35–44, and 12% of those where the person was aged 45–54. The incidence of ownership of rental property declined in the pre-retirement years and was 3% for those with a reference person aged 65 years and over.

### Income unit type and income

As investor income units tended to have reference persons concentrated in the 35–64 years age group, they were also likely to be couple income units, many with children still at home. In June 1997, about 440,900 or 75% of investors were couples—42% couples with dependent children and 33% couples without children.

Investor couples tended to have higher incomes than those couples who did not own rental properties. The median weekly income for couple investor units that did report income was \$1,162 per week (table 8.8). The median income for all couple units, whether investors or not, was \$766 per week in 1996–97. This higher median weekly income for investor couples reflects the fact that investor units are concentrated in the prime working age group. Almost 85% of these couples derived their principal source of income from wages and salaries or from their own business and a high proportion (68%) of investor couples also had both partners employed.

Lone person income units formed a much smaller group of investors with about 129,300 owning residential rental properties in June 1997. Like their couple counterparts, the majority (79%) of these single investors were employed.

However, lone person investor units tended to have higher proportions of people in the elderly and young age groups than couple investors (table 8.7). There were 13% of lone person investor units aged 65 years and over compared to 7% of investor couples with the reference person in this age group. With the younger groups, almost 38% of one-person investor units were aged under 35 years compared with 14% of reference persons for the couple investors. Unlike couple investor units who were mainly home owners, about 60% of these young single investors were living rent free or paying rent to someone else in the household. Almost all of these were living with their parents and some may have been leasing out properties they were buying as future homes.

**8.7 INVESTOR INCOME UNITS, By Age Of Reference Person—June 1997**

Age of reference person	Type of income unit			Investors as a % of all income units
	Couples	Lone person	All investors(a)	
	'000	'000	'000	%
18–34	61.5	49.0	113.4	3.6
35–44	128.9	21.9	155.5	9.1
45–54	144.8	27.1	177.6	12.3
55–64	73.5	13.9	88.1	9.0
65 and over	32.2	17.4	49.6	3.2
<b>Total</b>	<b>440.9</b>	<b>129.3</b>	<b>584.2</b>	<b>6.5</b>

(a) Includes one-parent investor income units.

Source: Unpublished data, Rental Investors Survey, June 1997.

**8.8 INVESTORS AND ALL INCOME UNITS, Median Weekly Income**

Income unit type	Median weekly income	
	Investor income units	All income units
	\$	\$
Couple	1 162	766
Lone person	666	302
<b>All income units(a)</b>	<b>1 009</b>	<b>477</b>

(a) Includes one-parent income units.

Source: Household Investors in Rental Dwellings, Australia, June 1997 (8711.0); and Income Distribution, Australia, 1996–97 (6523.0).

**Motivation for investment**

Despite the diverse demographic profile of investors, they shared some common reasons for investing. Most investors (66%) stated that one of the reasons considered when purchasing a property was that it provided a secure long-term investment.

The less frequently reported reasons for investing tended to differ with the age of the investors. For example, about 20% of investors under 45 years of age stated they were keen to reduce tax through negative gearing. The importance of negative gearing declined with the age of the reference person, with a negligible proportion aged 65 years and over citing this as a consideration in their investment decisions. For this older group of investors, the receipt of rental income was more important and cited as an investment motive by almost 30%.

As noted above, many younger investors were renting properties that might constitute a future home for them. Almost 21% of investor units with reference persons under the age of 35 held residential rental properties with this option in mind. Even for the older age groups, this was still an important consideration.

There was also a group of 'reluctant investors'—with 7% of investors stating that their properties were being rented because they wanted to sell, but were unable to find a buyer.

**8.9 REASONS FOR INVESTING IN MOST RECENTLY ACQUIRED PROPERTY—June 1997**

Age of reference person	Reasons for investing in or renting out most recently acquired property(a)								Total investor income units
	Long-term investment	Negative gearing	Rental income	Possible future home	Capital gain	Unable to sell	Family reasons	Other	
	%	%	%	%	%	%	%	%	'000
18 to 34	66.5	18.4	10.1	20.9	9.8	8.2	(b)2.0	6.8	113.4
35 to 44	68.7	20.3	12.2	16.3	9.6	6.7	(b)2.9	7.8	155.5
45 to 54	66.4	15.8	13.7	10.6	9.2	7.0	5.2	7.6	177.6
55 to 64	66.9	11.5	21.3	13.2	8.5	(b)4.2	9.9	7.4	88.1
65 and over	53.9	(b)2.2	29.9	12.0	(b)2.4	(b)7.0	(b)9.7	(b)8.7	49.6
<b>Total</b>	<b>66.0</b>	<b>15.7</b>	<b>15.1</b>	<b>14.6</b>	<b>8.8</b>	<b>6.8</b>	<b>5.0</b>	<b>7.6</b>	<b>584.2</b>

(a) Proportions will not add to 100% since respondents were asked to report all factors considered for investing. (b) The estimate has a relative standard error of 25% to 50%.

Source: Household Investors in Rental Dwellings, Australia (8711.0).

## Housing affordability

### Housing costs

Housing costs cover different items for different types of tenure. For households renting their dwelling, housing costs comprise the regular rental amounts paid to landlords. For owners with a mortgage, housing costs comprise the value of the mortgage payments as well as property rates. For owners who have no mortgage, housing costs comprise only the rates paid.

In 1995–96, mean (average) weekly housing costs for all households were \$103 (table 8.10). However, there was considerable variation in housing costs, with half of all households having payments of less than \$58 per week.

Housing costs for owners with a mortgage, at an average of \$203 per week, were higher than for other forms of tenure. Households renting from private landlords had mean weekly housing costs of \$148, compared to \$62 for public renters.

For many households, weekly housing costs are a significant proportion of their weekly income. Housing costs represented over 25% of gross weekly income for a third of households who were paying off a housing mortgage and for over 40% of private renter households. This can have a major effect on funds left over for households to spend on other necessities such as food, clothing and transport. For low income households in particular, the level of housing costs may be a major factor in the economic wellbeing of the occupants.

**8.10 HOUSING COSTS, By Household Composition by Tenure Type—1995–96**

Tenure type	Couple only	Couple with dependent children only	Couple-other	Total couples	One parent-one family	Lone person	Other	Total
<b>MEAN WEEKLY HOUSING COSTS (\$)</b>								
Owner without a mortgage	19	27	24	22	22	16	24	<b>21</b>
Owner with a mortgage	221	211	176	208	146	195	226	<b>203</b>
Public renter	77	89	(a)97	87	63	43	(a)86	<b>62</b>
Private renter	169	158	176	164	139	115	170	<b>148</b>
Total renters(b)	154	137	148	145	104	91	160	<b>124</b>
Total owner and renter households	89	143	86	110	88	76	142	<b>103</b>
<b>MEAN WEEKLY INCOME (\$)</b>								
Owner without a mortgage	585	1 011	1 365	877	717	307	930	<b>731</b>
Owner with a mortgage	1 084	1 095	1 371	1 140	720	692	1 197	<b>1 052</b>
Public renter	445	575	(a)767	567	359	198	(a)683	<b>360</b>
Private renter	1 018	712	1 030	873	502	444	974	<b>726</b>
Total renters(b)	934	704	960	823	441	371	964	<b>643</b>
Total owner and renter households	761	989	1 327	962	585	398	994	<b>798</b>
<b>MEAN HOUSING COSTS AS A PROPORTION OF INCOME (%)</b>								
Owner without a mortgage	3	3	2	3	3	5	3	<b>3</b>
Owner with a mortgage	20	19	13	18	20	28	19	<b>19</b>
Public renter	17	15	(a)13	15	18	22	(a)13	<b>17</b>
Private renter	17	22	17	19	28	26	17	<b>20</b>
Total renters(b)	16	19	15	18	24	24	17	<b>19</b>
Total owner and renter households	12	14	6	11	15	19	14	<b>13</b>
<b>HOUSEHOLDS ('000)</b>								
Owner without a mortgage	966.4	468.0	447.2	1 881.5	175.8	692.6	107.8	<b>2 857.7</b>
Owner with a mortgage	379.9	824.5	251.6	1 456.0	124.2	271.2	80.2	<b>1 931.6</b>
Public renter	32.0	68.4	(a)16.8	117.2	115.3	163.0	(a)6.8	<b>402.3</b>
Private renter	220.3	248.7	51.2	520.1	138.7	417.7	292.7	<b>1 369.3</b>
Total renters(b)	270.5	344.7	76.9	692.1	278.0	637.4	325.2	<b>1 932.6</b>
Total owner and renter households	1 616.7	1 637.2	775.7	4 029.6	578.0	1 601.1	513.2	<b>6 721.9</b>

(a) The estimate has a relative standard error of 25% to 50%. (b) Includes other renters.

Source: *Housing Occupancy and Costs, Australia (4130.0)*.

## Life cycle groups

Households can vary considerably in terms of their size and composition, as well as their housing tenure and the type of dwelling they occupy. All of these factors, along with location of the dwelling, influence their housing costs.

Households may be small, as with young single person households and those comprising young childless couples. They tend to grow in size as the couples get older and have children. Household size usually reaches its peak when parents and their dependent and adult children

share the same dwelling. As children leave home, household size again declines.

The tenure of the dwelling tends to follow a similar progression to the life cycle of the occupants. This cycle follows a pattern of renting accommodation in early adulthood, moving to home purchase and mortgages while raising a family, and owning the accommodation outright without any mortgage in older age. Other factors that affect housing payments, such as income, are similarly related to life cycle stages. Housing payments and tenure are examined below, and illustrated in table 8.11, in terms of life cycle progression.

**8.11 HOUSING COSTS, By Tenure Type by Selected Life Cycle Groups—1995–96**

Selected life cycle groups	Owner without a mortgage	Owner with a mortgage	Renter			Total
			Public	Private	Total(a)	
MEAN WEEKLY HOUSING COSTS (\$)						
Lone person only, under 35	15	215	(b)57	122	110	136
Couple only, reference person under 35	29	265	n.p.	160	159	198
Couple with dependent children only	27	211	89	158	137	143
One parent with dependent children	22	149	58	134	99	100
Couple with non-dependent children only	24	192	(b)96	162	135	73
Couple only, reference person 55 to 64	20	141	(b)94	(b)280	201	50
Couple only, reference person 65 and over	17	62	(b)62	(b)101	82	23
Lone person only, 65 and over	15	(b)45	38	87	55	25
MEAN WEEKLY INCOME (\$)						
Lone person only, under 35	624	637	(b)282	486	468	531
Couple only, reference person under 35	965	1 174	n.p.	1 001	993	1 077
Couple with dependent children only	1 011	1 095	575	712	704	989
One parent with dependent children	540	592	338	452	397	464
Couple with non-dependent children only	1 349	1 372	(b)718	960	861	1 313
Couple only, reference person 55 to 64	631	827	(b)504	(b)1 286	975	684
Couple only, reference person 65 and over	429	498	(b)324	(b)351	341	427
Lone person only, 65 and over	242	(b)275	182	229	198	232
MEAN HOUSING COSTS AS A PROPORTION OF INCOME (%)						
Lone person only, under 35	2	34	(b)20	25	24	26
Couple only, reference person under 35	3	23	n.p.	16	16	18
Couple with dependent children only	3	19	15	22	19	14
One parent with dependent children	4	25	17	30	25	22
Couple with non-dependent children only	2	14	(b)13	17	16	6
Couple only, reference person 55 to 64	3	17	(b)19	(b)22	21	7
Couple only, reference person 65 and over	4	12	(b)19	(b)29	24	5
Lone person only, 65 and over	6	(b)17	21	38	28	11
HOUSEHOLDS ('000)						
Lone person only, under 35	24.5	112.9	(b)19.1	186.5	225.7	363.0
Couple only, reference person under 35	29.7	163.6	n.p.	143.6	150.0	343.3
Couple with dependent children only	468.0	824.5	68.4	248.7	344.7	1 637.2
One parent with dependent children	49.6	83.1	97.6	108.0	216.5	349.2
Couple with non-dependent children only	292.8	103.6	(b)12.0	22.8	37.0	433.4
Couple only, reference person 55 to 64	282.4	46.2	(b)11.1	(b)16.7	28.7	357.4
Couple only, reference person 65 and over	488.5	25.2	(b)15.2	(b)16.4	32.1	545.8
Lone person only, 65 and over	423.1	(b)9.3	68.3	45.9	136.0	568.5

(a) Includes other renters. (b) The estimate has a relative standard error of 25% to 50%.

Source: *Housing Occupancy and Costs, Australia (4130.0)*.

### Young single households

Young lone person households are relatively few in number. In 1995–96, these households numbered 363,000. The majority of young singles under the age of 35 are still living with their parent(s) and many others are in group houses. It is estimated that in 1995–96 there were 283,900 group houses with young people under 35 years.

The high cost of living alone is probably one of the deciding factors in the choice of shared housing for the young. For young singles living alone in 1995–96, over half (51%) were living in private rental accommodation, with average weekly housing costs of \$122. This constituted an average of 25% of gross weekly income for these households. An additional 31% of these young single households had embarked on home purchase and were paying off a mortgage. Their average housing costs were higher at \$215 per week or 34% of gross weekly income. The 5% of young single households which were public renters had much lower housing costs of \$57 per week or 20% of gross weekly income.

### Couples only, under 35 years

Young couple households were more likely to have moved into home purchase than their single counterparts. Of the 343,300 young couple only households in 1995–96, about 163,600 or 48% were paying off a mortgage and 9% had already paid off their mortgage. An additional 42% were renting privately and almost none were tenants of public housing.

### Couple households with dependent children only

The trend to home purchase increases as couples become parents and raise their children. In 1995–96, of couples with dependent children only, 50% were paying off a mortgage and 29% were owners without a mortgage. Over one-fifth of the couple families with dependent children were still renting their accommodation and these were mainly renting from private landlords. Average weekly housing costs varied for different types of tenure, from \$211 for those with a mortgage to \$27 for those without a mortgage. Public renters were paying \$89 per week and private renters \$158.

### Lone parent households

In 1995–96, 14% of one parent households owned their homes without a mortgage, 24% were still paying off a mortgage and over 60% were renting their accommodation.

Compared to most other households, a high proportion of one parent households (28%) were renting from a public landlord.

Housing costs were similarly varied for one parent households with different types of tenancy, ranging from a low average of \$22 per week for owners without a mortgage to a high of \$149 for those with a mortgage. Of those renting, private renters paid an average of \$134 compared to \$58 per week for public renters.

Incomes also varied considerably across one parent households, mainly reflecting their different attachments to the labour force. Owners paying off a mortgage tended to have higher average weekly incomes than those in other tenancy arrangements, \$592 compared to \$452 for private renters and \$338 for public renters. The group with the highest proportion of their income committed to housing payments were those who were renting privately, with mean payments of \$134 a week constituting 30% of gross weekly income.

### Early retirement years

The need to accommodate dependent children has ceased by the time many parents reach their mid-fifties. Some older couples have only non-dependent children present (433,400 in 1995–96) and a smaller number of couples (357,400) in 1995–96 were again living alone.

The wide disparity in income for couples in this age group living alone is clear from the fact that, while the mean weekly household income was \$684, 50% of these households had an income of less than \$504 (median income).

Almost 80% of couples aged 55–64 and living alone were owners without a mortgage. Their housing payments were low at an average of \$20 per week, or 3% of total household income. About 13% of the households were owners with a mortgage, and both this group and those who were renting were paying substantially higher proportions of their income in housing payments, 17% and 21% respectively.

### Older households

By the traditional retirement age of 65 years, both incomes and housing payments have been greatly reduced. In 1995–96, 90% of older couple households were owners without a mortgage with average weekly housing costs of \$17. For older couples who still had a mortgage, these repayments were also considerably lower than those of their younger counterparts at an

average of \$62 per week. This reflects in part the fact that these households may have purchased their first home some 10 to 20 years earlier when home prices and mortgages were considerably lower.

However, for the small proportion who were renting, housing payments consumed relatively large proportions of their incomes. In 1995–96, about 32,100 or 6% of couples aged 65 and over were renting, with average housing payments of \$82 or 24% of their average weekly income. The 16,400 who were renting privately were spending an average of 29% of their income on housing payments and the 15,200 public renters were spending an average of 19%.

In 1995–96, there were about 568,500 lone person households with the occupant aged 65 years or over. The lone older people were less likely than the older couples to be owners without a mortgage, 74% and 90% respectively. A relatively high proportion of older people living alone were public renters, 12% in 1995–96. A further 8% were renting from private landlords. While the dollar value of their housing payments was lower than for the older couples with similar tenure, they were paying slightly higher proportions of their incomes for their housing.

## Capital cities

In 1995–96, the mean weekly housing costs for households in all capital cities was \$114 (table 8.12). However, there was considerable variation between capital cities, with Hobart the lowest at \$86 per week. Canberra had the highest mean housing costs at \$141 per week, due mainly to Canberra having a higher proportion of owners with a mortgage (38% compared to 30% for all capital cities).

Housing costs for home owners without a mortgage were similar across all capital cities, ranging from an average of \$18 a week in Adelaide to \$25 per week in Melbourne.

For home owners with a mortgage, mean weekly housing costs were highest in Sydney and Darwin (\$249 and \$239 respectively), and were lowest in Hobart (\$147).

For households renting privately, housing costs were significantly higher in Sydney where private rents averaged \$194 per week. Lowest rents were recorded in Perth and Hobart (each \$126) and Adelaide (\$127).

Mean weekly housing costs for households renting from State or Territory housing authorities ranged from \$52 in Brisbane to \$94 in Darwin.



**8.12 HOUSING COSTS, By Capital City by Tenure Type—1995–96**

Tenure type	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	All capital cities
MEAN WEEKLY HOUSING COSTS (\$)									
Owner without a mortgage	23	25	23	18	20	20	21	24	23
Owner with a mortgage	249	210	221	171	194	147	239	228	216
Public renter	60	60	52	62	56	63	94	77	61
Private renter	194	142	145	127	126	126	163	170	160
Total renters(a)	162	126	123	102	112	97	125	135	135
Total owner and renter households	129	108	112	92	106	86	130	141	114
MEAN WEEKLY INCOME (\$)									
Owner without a mortgage	886	793	792	726	718	720	1 144	952	811
Owner with a mortgage	1 306	1 074	1 042	1 010	1 057	986	988	1 209	1 128
Public renter	346	378	292	370	356	366	581	407	360
Private renter	942	674	692	641	686	705	789	955	782
Total renters(a)	805	617	621	537	625	568	702	764	684
Total owner and renter households	969	834	812	770	815	759	855	985	869
MEAN HOUSING COSTS AS A PROPORTION OF INCOME (%)									
Owner without a mortgage	3	3	3	2	3	3	2	3	3
Owner with a mortgage	19	20	21	17	18	15	24	19	19
Public renter	17	16	18	17	16	17	16	19	17
Private renter	21	21	21	20	18	18	21	18	20
Total renters(a)	20	20	20	19	18	17	18	18	20
Total owner and renter households	13	13	14	12	13	11	15	14	13
HOUSEHOLDS ('000)									
Owner without a mortgage	553.1	515.6	221.5	168.6	182.8	27.3	6.0	30.0	1 704.9
Owner with a mortgage	362.2	364.7	166.2	143.3	170.2	25.0	6.7	42.7	1 280.9
Public renter	93.4	42.8	36.0	38.0	19.3	8.2	9.3	12.8	259.9
Private renter	343.5	246.3	136.5	68.3	99.1	13.2	6.9	22.8	936.4
Total renters(a)	460.0	309.3	178.5	114.6	124.5	24.2	17.0	38.6	1 266.8
Total owner and renter households	1 375.3	1 189.7	566.1	426.5	477.5	76.5	29.6	111.4	4 252.7

(a) Includes other renters.

Source: Unpublished data, Survey of Income and Housing Costs.

**House prices**

House price indexes enable the comparison of price changes between cities, though not the price levels themselves.

Canberra and Hobart were the only capital cities where the price index of established houses for 1997–98 was lower than for 1996–97. Hobart recorded the greater drop in prices (of 2.4%), followed by Canberra (0.2%) (table 8.13).

The greatest rise in established house prices in 1997–98 was recorded in Melbourne (12.7%).

Other capital city price rises were in Sydney (8.1%), Perth (3.8%), Adelaide (3.6%), Brisbane (1.2%) and Darwin (1.0%).

In 1997–98, project home prices (cost of new dwellings excluding land) rose in Adelaide (by 4.4%), Sydney (1.6%), Darwin (1.0%), Perth (0.9%) and Melbourne (0.8%). Prices fell in Brisbane by 0.3% and in Canberra by 0.1%. In Hobart there was no change (table 8.14).

The price index of materials used in house building is discussed in *Chapter 20, Construction*.

**8.13 PRICE INDEX NUMBERS FOR ESTABLISHED HOUSES(a)**

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra
INDEX NUMBER								
1995–96	115.8	97.6	136.8	108.3	108.2	129.8	188.0	127.8
1996–97	118.9	101.4	137.2	108.2	109.2	128.5	196.9	126.4
1997–98	128.5	114.3	138.9	112.1	113.3	125.4	198.9	126.2
CHANGE FROM PREVIOUS YEAR (%)								
1995–96	1.8	–0.3	–1.8	–3.0	–0.7	0.6	5.6	–2.0
1996–97	2.7	3.9	0.3	–0.1	0.9	–1.0	4.7	–1.1
1997–98	8.1	12.7	1.2	3.6	3.8	–2.4	1.0	–0.2

(a) Reference base year 1989–90 = 100.0.

Source: House Price Indexes: Eight Capital Cities (6416.0).

**8.14 PRICE INDEX NUMBERS FOR PROJECT HOMES(a)**

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra
INDEX NUMBER								
1995–96	110.2	107.3	113.7	112.8	101.6	123.4	129.9	124.7
1996–97	110.4	107.7	112.7	108.3	101.3	123.3	136.0	123.6
1997–98	112.2	108.6	112.4	113.1	102.2	123.3	137.3	123.5
CHANGE FROM PREVIOUS YEAR (%)								
1995–96	2.1	1.4	1.1	–1.6	1.6	1.7	3.8	–3.5
1996–97	0.2	0.4	–0.9	–4.0	–0.3	–0.1	4.7	–0.9
1997–97	1.6	0.8	–0.3	4.4	0.9	0.0	1.0	–0.1

(a) Reference base year 1989–90 = 100.0.

Source: House Price Indexes: Eight Capital Cities (6416.0).

**Value of dwellings**

In the 1995–96 Survey of Income and Housing Costs, owners were asked to estimate the value of their dwelling. These estimates may differ from valuations made by accredited valuers or the actual sale price of the dwelling. The extent of the difference has not been measured. Therefore some care needs to be exercised in the use of these data.

The median owner-estimated value of dwellings for capital cities was \$156,000, 11% higher than the national median (\$141,000). The median value was highest in Sydney at \$210,000, followed by Canberra (\$163,000), Darwin (\$154,000) and Brisbane (\$149,000).

**8.15 VALUE OF DWELLINGS(a), By Dwelling Structure by Capital City—1995–96**

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	All capital cities
MEDIAN VALUE OF DWELLINGS (\$'000)									
Separate house	215.8	140.5	151.7	122.0	152.5	121.3	159.6	164.6	158.6
Semi-detached/row or terrace house/townhouse	191.3	132.0	(b)121.3	123.2	116.0	(c)77.1	(b)138.0	141.3	137.0
Flat/unit/apartment	198.7	103.3	(b)120.4	87.6	96.6	(b)94.4	n.p.	(b)126.3	127.2
All dwellings(d)	210.2	136.0	149.3	119.7	146.4	119.8	154.4	162.7	156.0
NUMBER ('000)									
Capital city dwellings	915.3	880.3	387.7	311.9	353.0	52.3	12.6	72.8	2 985.9

(a) According to owners. (b) The estimate has a relative standard error of 25% to 50%. (c) The estimate has a relative standard error greater than 50%. (d) Includes other dwellings.

Source: Unpublished data, Survey of Income and Housing Costs.



## The family home—value and equity

### Introduction

Home ownership is often described as part of the ‘great Australian dream’, and has been encouraged and promoted by governments over much of Australia’s history. Government regulations in the financial sector have affected both the supply and cost of housing finance. Direct measures such as cash grants and subsidies, and the favourable treatment of the family home in social security and taxation provisions, have also encouraged home ownership. In 1995–96, 70% of households lived in their own home.

Home ownership usually contributes to the wellbeing of owners by providing secure and, in the longer term, more affordable housing. For many Australians, the equity<sup>1</sup> accumulated in their home represents the major part of their household wealth. As well as financial security for retirement and unemployment, this equity

also provides benefits such as collateral for loans for purposes such as cars and holidays, and for other investments.

### Dwelling values for owner-occupied homes

In 1995–96, the mean value<sup>2</sup> of all owner-occupied dwellings in Australia was \$171,000 (table 8.16). However, values of dwellings are affected by a large number of factors, including size; condition; the quality and number of features such as garages, swimming pools, gardens, extra bathrooms, heating and cooling systems; and their proximity to schools, shopping centres and work.

The location of the dwelling is a major factor, with dwellings in capital cities having the highest home values within each State. In 1995–96, the mean value of owner-occupied dwellings in all capital cities was \$192,000 (table 8.17), compared to \$136,000 for homes outside the capital cities. These differences in home values result in very different housing wealth holdings for families across Australia.

#### 8.16 DWELLING VALUE AND EQUITY IN THE HOME BY OWNER-OCCUPIERS—1995–96

	Mean dwelling value	Mean loan outstanding	Mean equity	Owner-occupier households
Age of reference person	\$'000	\$'000	\$'000	'000
Under 35	147.6	62.3	85.3	787.2
35–44	179.0	46.7	132.3	1 082.1
45–54	188.8	22.7	166.1	1 063.5
55–64	179.2	6.7	172.6	750.2
65 and over	156.2	1.1	155.0	1 106.2
<b>Total</b>	<b>170.8</b>	<b>27.1</b>	<b>143.6</b>	<b>4 789.3</b>

Source: Australian Social Trends, 1998 (4102.0).

#### 8.17 MEAN DWELLING VALUE OF OWNER-OCCUPIED HOMES IN CAPITAL CITIES—1995–96

	Separate house	Semi-detached(a)	Flat, unit, apartment	All dwellings	Mean loan outstanding	Mean equity
Capital city	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Sydney	263.3	237.6	214.2	256.4	34.2	222.2
Melbourne	163.2	153.5	110.5	160.1	27.3	132.8
Brisbane	169.9	(b)143.2	(b)161.1	168.0	31.7	136.2
Adelaide	140.9	144.9	89.4	138.2	26.0	112.2
Perth	196.3	129.6	150.3	187.8	31.2	156.6
Hobart	130.3	(c)91.9	(b)101.5	128.5	20.0	108.5
Darwin	185.2	(b)148.2	n.p.	176.5	40.0	136.4
Canberra	186.5	173.2	(b)133.5	183.4	43.4	140.0
<b>All capital cities</b>	<b>195.0</b>	<b>175.5</b>	<b>164.6</b>	<b>191.7</b>	<b>30.6</b>	<b>161.1</b>

(a) Includes row or terrace house and townhouse. (b) The estimate has a relative standard error of 25% to 50%. (c) The estimate has a relative standard error greater than 50%.

Source: Unpublished data, Survey of Income and Housing Costs.

The value of homes also varies markedly across different capital cities. In 1995–96, the mean value of owner-occupied dwellings in Sydney was \$256,000, while the mean value in Hobart was half of this (\$129,000).

Dwelling values also vary according to the type of dwelling structures. Nearly all (90%) of owner-occupier households live in separate houses, with 5% in townhouses and other semi-detached houses, and 5% in flats, units and apartments. Separate houses are, on average, worth more than other types of dwellings.

### Equity in the home

Housing wealth for owner-occupiers is defined as their equity in the family home (including land). It is accumulated through the deposit placed at the time of purchase, through paying off the mortgage principal, and through capital gains and losses as the market value of the dwelling rises and falls over time. The equity is measured as the value of the dwelling, as estimated by the householders themselves, less the reported value of any outstanding loans secured against the dwelling.

For some buyers, high interest payments, combined with falling dwelling values in some periods and some locations, as well as any additional borrowings they have made, may even result in negative equity some years after purchase.

In general, however, the amount of equity held in the family home follows a life cycle pattern. People accumulate a larger financial stake in their homes as they grow older. On average, young home owners have a smaller equity in their home than older home owners. This is because they may not have made enough mortgage repayments since purchasing their home to significantly reduce their loan principal.

However, even for young home owners, the equity in their homes is high. In 1995–96, home owners aged under 35 had an average equity of \$85,000 in their homes—58% of the mean value of dwellings owned by this age group, and over half of the mean equity of all owner-occupiers (table 8.16).

Housing wealth for home owners increased with age up to 55–64, when the mean equity holding in 1995–96 was \$173,000. For households in the older age group (65 and over), the value of equity

was lower (\$155,000). Elderly people were, on average, in smaller and lower-value dwellings.

Larger households generally lived in more expensive homes (reflecting a need for larger living areas) and also had a higher level of equity in their home. For example, the average value of equity owned by couples living with their dependent and non-dependent children only was \$173,000, a value 20% higher than the average for all home owners. In contrast, one-parent households had a considerably lower level of equity (\$121,000).

### How much of Australia's household wealth is in the family home?

In 1995–96, the total value of all owner-occupied dwellings (including land) in Australia was estimated at \$820b. Owner-occupiers held \$690b in equity in their homes, or 84% of the value of total owner-occupier dwelling stock.

However, households have wealth holdings in many other forms of assets. Estimates from the Australian National Accounts (which are not completely comparable to the estimates based on household responses) show that the value of dwellings and residential land represents 50% of the total value of assets owned by the household sector. Almost 85% of this was for dwellings owned by owner-occupiers, the remainder being dwellings owned by households for rental investment, holiday homes and vacant dwellings. Equity in superannuation funds accounted for 17% of household assets, cash and saving deposits 12%, and shares and other securities 8%.

### Endnotes

1 Equity in the home is the stated value of the dwelling less the stated value of outstanding mortgages and loans secured against the dwelling. The value of outstanding loans may have been underestimated by some households, such as where the original loan was extended for non-housing purposes. As a result this may have overstated the value of the equity.

2 Value of dwelling is the estimated value of the dwelling and land, as reported by the household respondent in the Survey of Income and Housing Costs. It should be noted that estimates provided by household members may not necessarily agree with the market price or those obtained from certified valuers.

## Housing finance for owner occupation

In 1997–98, a total of \$54,576m was committed by all lenders for the purchase of 481,728 dwellings (table 8.18). The number of commitments in 1997–98 was little different from the previous year. However, the value of loans rose 9.2% as a result of a 9.1% increase in the average borrowing size over the period to \$113,300. In 1997–98, 79.3% of the money was used to purchase or refinance established

dwellings, 15.4% to finance construction of new dwellings and the remainder (5.3%) was used to purchase newly erected dwellings.

Commitments for construction of dwellings rose by 12.7% in 1997–98 to 74,218, the only purpose category to show an increase. Total commitments for the purchase of newly erected dwellings were steady at 23,226 and established dwelling commitments (including refinancing) fell by 2.1% to 384,284.

### 8.18 SECURED HOUSING FINANCE COMMITMENTS(a), By Purpose and Type of Lender

	Type of lender				
	Unit	Banks	Permanent building societies	Other lenders(b)	Total
CONSTRUCTION OF DWELLINGS					
Dwelling units					
1995-96	no.	56 535	3 404	4 289	64 228
1996-97	no.	58 191	2 880	4 798	65 869
1997-98	no.	63 325	3 735	7 158	74 218
Value of commitments					
1995-96	\$m	5 336	357	396	6 086
1996-97	\$m	5 825	338	482	6 648
1997-98	\$m	7 014	487	877	8 379
PURCHASE OF NEWLY ERECTED DWELLINGS					
Dwelling units					
1995-96	no.	18 341	467	2 007	20 815
1996-97	no.	19 356	281	3 415	23 052
1997-98	no.	18 889	226	4 111	23 226
Value of commitments					
1995-96	\$m	1 917	50	213	2 177
1996-97	\$m	2 276	33	345	2 654
1997-98	\$m	2 402	30	472	2 903
PURCHASE OF ESTABLISHED DWELLINGS(c)					
Dwelling units					
1995-96	no.	307 570	20 309	38 598	366 477
1996-97	no.	323 173	16 544	52 799	392 516
1997-98	no.	309 035	15 762	59 487	384 284
Value of commitments					
1995-96	\$m	29 563	1 889	3 962	35 414
1996-97	\$m	33 383	1 660	5 635	40 677
1997-98	\$m	34 884	1 617	6 794	43 294
TOTAL					
Dwelling units					
1995-96	no.	382 446	24 180	44 894	451 520
1996-97	no.	400 720	19 705	61 012	481 437
1997-98	no.	391 249	19 723	70 756	481 728
Value of commitments					
1995-96	\$m	36 816	2 296	4 571	43 677
1996-97	\$m	41 484	2 031	6 462	49 979
1997-98	\$m	44 300	2 134	8 143	54 578

(a) Excludes alterations and additions. (b) Includes mortgage managers. (c) Includes refinancing.

Source: *Housing Finance for Owner Occupation, Australia* (5609.0).

Banks continued to be the predominant lenders. However, there has been increasing diversity of lenders. Banks' market share fell to 81.2% of total commitments in 1997–98, down from 83.2% in the previous year. The number of commitments made by banks for housing finance totalled 391,249 during 1997–98, a fall of 2.4% from the previous year. This decline was matched by a similar rise in the number of loans committed by other lenders, mainly mortgage managers, which were up by 9,744 commitments to 70,756 (14.7% of all commitments, up from 12.7% in 1996–97). The number of finance commitments made to individuals by permanent building societies was static at 19,723 in 1997–98 (still 4.1% of all commitments).

In 1997–98, the average borrowing from banks was \$113,200 (up 9.4% from 1996–97), permanent building societies \$108,200 (up 5.0%) and \$115,100 from other lenders (an increase of 8.7%).

## Housing assistance

While most Australians are able to house themselves without government assistance, such assistance remains important for various population groups, especially low income earners and social security recipients. Housing assistance is

provided by the Commonwealth Government and the State and Territory Governments through a range of housing and other programs. Assistance for people with low incomes is provided through public housing, home purchase assistance and rent assistance schemes. Assistance is also provided to community organisations and local governments for refuges and crisis accommodation.

The *Housing Assistance Act 1996* provides the legislative basis for the Commonwealth's provision of financial assistance to the States and Territories for housing and related purposes. The Act authorised the Commonwealth to form and enter into a new Commonwealth State Housing Agreement (CSHA) with the States and Territories. The 1996 CSHA commenced on 1 July 1996 and is due to expire on 30 June 1999. It sets out the terms for the provision of housing assistance for rental housing, home purchase and other specific housing programs. Details of Commonwealth assistance provided under the CSHA for 1997–98 are set out in table 8.19.

The 1996 CSHA is an outcomes-based agreement which requires States to report annually on their performance against key outcome measures and provides an improved level of accountability for and transparency of housing operations.

**8.19 COMMONWEALTH-STATE HOUSING AGREEMENT, Payments to States(a)—1997–98**

	NSW	Vic.	Qld	WA	SA	Tas.	ACT	NT	Aust.
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Base Funding(b)	259 265	190 333	22 321	74 058	41 351	23 628	12 615	7 167	<b>630 738</b>
Community Housing Program	21 676	15 913	11 720	6 192	5 129	1 647	1 071	642	<b>63 990</b>
Aboriginal Rental Housing Program	17 777	3 638	25 227	15 862	8 342	696	0	19 458	<b>91 000</b>
Crisis Accommodation Program	13 433	9 861	7 263	3 837	3 178	1 021	664	398	<b>39 655</b>
<b>Total</b>	<b>312 151</b>	<b>219 745</b>	<b>66 531</b>	<b>99 949</b>	<b>58 000</b>	<b>26 992</b>	<b>14 350</b>	<b>27 665</b>	<b>825 383</b>

(a) Following deduction of final State fiscal contributions. (b) The original proposed allocations for Base Funding for Queensland, South Australia, the Australian Capital Territory and the Northern Territory have been reduced to give the final payments above in view of agreement reached for these States and Territories to use Base Funding to meet part or all of their State Fiscal Contribution to the Commonwealth's budget savings target.

Source: Department of Family and Community Services.

## Public housing

Public housing comprises dwellings owned and managed by State and Territory housing authorities and which are made available at low cost to tenants. Rents are generally set at a maximum of 25% of income, thereby providing low cost housing to people on low incomes. The median weekly housing costs of public renters in 1996–97 was \$55, compared to \$140 for private renters. Government expenditure on public housing was approximately \$1.4b in 1996–97.

Over recent decades, public housing has been increasingly targeted towards those most in need. In 1996–97, 403,708 households (6% of all households) were living in public housing; of these, about 80% were in the lowest 40% of the household income distribution. Government pensions and benefits were the main source of income for the majority of households in public housing.

## Home purchase assistance

Under the CSHA, the State and Territory Governments provide home purchase assistance to low to moderate income earners, including loans, shared equity schemes, deposit assistance and mortgage relief. In 1996–97, government expenditure on home purchase assistance arrangements was almost \$520m.

## Rent assistance

Under the Commonwealth Government Rent Assistance Program, rent assistance is paid to people who rent privately (including boarders and lodgers, residents in retirement villages, caravan parks, etc.) and pay rent above minimum threshold rental levels. It is a non-taxable supplement payable by the Departments of Family and Community Services, Veterans' Affairs, and Education, Training and Youth Affairs to people with low-income who are eligible. As at March 1998, there were about 910,560 recipients of rent assistance, with total expenditure in 1997–98 estimated at \$1.48b. The level of rent assistance payable varies with the amount of rent paid, marital status and number of children in the family. For example, as at March 1998, for a couple with one or two children who paid over \$255 a fortnight in rent, the maximum fortnightly rent assistance was \$87.

As with public housing renters, a large proportion of rent assistance recipients are either lone persons or lone parents. At March 1998, 56% of those receiving rent assistance from the Department of Family and Community Services were people living alone, or in shared accommodation, and 21% were lone parent families.

Under the CSHA, the State and Territory Governments also assist low income earners with the costs of rent, bonds and relocation in the private rental market. In 1996–97, almost \$60m was provided through these arrangements.

## Crisis accommodation

Governments also provide assistance in meeting the short-term accommodation needs of homeless people. The Commonwealth Government provides capital funding for crisis accommodation through the Crisis Accommodation Program (\$40m in both 1996–97 and 1997–98) under the CSHA. The Commonwealth Government and the State and Territory Governments also provide assistance to people who are homeless or at imminent risk of homelessness, through the Supported Accommodation Assistance Program (SAAP).

In 1998–99, national funding for the SAAP program is \$230m. Funds are provided to community organisations and local governments for services such as refuges, shelters and halfway houses, and also for referral, counselling and advocacy services. About 1,300 service outlets are funded under SAAP.

The Australian Institute of Health and Welfare (AIHW) estimates that at least 100,900 persons considered homeless under the SAAP definition received assistance from agencies in 1996–97. These persons had 148,900 completed support periods over that time. Agencies provided support to more male clients (52%) than female clients (48%). Clients between 15 and 19 years of age were the single largest age grouping, accounting for one-fifth of all clients. Those aged between 20 and 24 constituted 16% of the total.

In relation to the housing circumstances of clients prior to their use of services, the largest proportion of support periods (34%) was for clients who were living in the private rental market. Almost one-fifth of support periods (19%) were for clients who had no shelter at all or had been living in a car, tent or squat prior to seeking assistance, while in 20% of support periods clients had been staying at accommodation funded by the SAAP or Crisis Accommodation Program.

Crisis or short-term accommodation (less than three months) was provided much more frequently than other types of accommodation. In a large proportion of cases (65%), the duration of accommodation was one week or less.

### Other programs

Commonwealth housing assistance provided under the CSHA and the Rent Assistance Program is complemented by financial assistance for housing through a number of other programs which include:

- Residential care for frail older people—the Commonwealth Government provides capital and recurrent funding for the construction and operational costs of long-term residential aged care facilities such as nursing homes and hostels (see *Chapter 7, Income and welfare, Residential Aged Care Program* section).
- Accommodation services for people with a disability—under the Commonwealth/State Disability Agreement, the Commonwealth provides funding to the States and Territories for the provision of accommodation services for people with disabilities, while State and Territory Governments are responsible for administering these services (see *Chapter 7, Income and welfare, People with a disability* section).
- Housing assistance programs for Indigenous peoples—the Aboriginal and Torres Strait Islander Commission (ATSIC) administers a number of programs to improve the living environment of Aboriginal and Torres Strait Islander peoples, with the aim of improving community and individual health and wellbeing. An ATSIC consultancy on the results for the 1996 Census suggests Aboriginal and Torres Strait Islander peoples are disadvantaged in terms of housing need. It was estimated that there is a national shortfall

of almost 39,000 bedrooms to adequately house Indigenous families. ATSIC's Community Housing and Infrastructure Program (CHIP) provides funds for the construction, purchase, repairs and management of community housing as well as for the provision and maintenance of housing related infrastructure (essential services such as water, roads, sewerage and electricity). ATSIC also provides State water and power grants to supplement State Governments' efforts in the provision of essential and municipal services to disadvantaged rural and remote communities. In 1997–98, CHIP expenditure totalled \$231m, of which around half went to the provision of housing. The Home Ownership scheme is designed to reduce the disparity between the rate of home ownership in Indigenous communities and that in the wider Australian community. The rate of home ownership for Aboriginal family and lone-person households was estimated in the 1996 Census to be 31%. This compares with a national non-Indigenous figure of 71%. The scheme provides home loans at concessional interest rates to Aboriginal and Torres Strait Islander families. It targets low-income families with the capacity to repay a long-term loan, but who have difficulty obtaining finance from traditional lending institutions. A total of 402 loans were made in 1997–98, with the total loan portfolio administered by ATSIC now at \$251m.

The Commonwealth also funds the AIHW. The Institute's role is to gather, analyse and disseminate national data on health and welfare services, including housing assistance, in order to support planning and policy making in government and community organisations. In 1997, the Institute published *Australia's Welfare 1997: Services and Assistance*, which contains chapters on housing assistance and services for homeless people. Included in these chapters is information examining the need for assistance, government expenditure on services and assistance, the characteristics of recipients of assistance, and outcomes. The Institute undertakes data development for the performance reporting required by the six program areas of the Commonwealth State Housing Agreement. The six programs comprise Public Housing, Community Housing, Aboriginal Rental Housing, Crisis Accommodation, Private Rental Assistance, and Home Purchase Assistance.

A housing authority also exists in each State and Territory, which is responsible for the provision of public rental housing and often other housing related services such as home loans. These authorities are:

- New South Wales—Department of Housing;
- Victoria—Department of Human Services;
- Queensland—Department of Public Works and Housing;
- South Australia—South Australian Housing Trust;
- Western Australia—Homeswest;
- Tasmania—Department of Community and Health Services;
- Northern Territory—Department of Housing and Local Government; and
- Australian Capital Territory—ACT Housing.



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## Introduction

This chapter provides information on various aspects of the health of the Australian population and the activities of government and other bodies relating to health. The chapter uses data from the most up-to-date sources available, including data from the 1995 National Health Survey.

The Australian health care system comprises a diversity of arrangements for planning, funding and delivering health services, which feature a mix of private and public sector involvement.

At the national level, health services in Australia are administered by the Commonwealth Government, through two ministers appointed to the portfolio of Health and Aged Care. The Minister for Health and Aged Care takes an overview role for the whole portfolio and is responsible for Medicare benefits, hospitals, private health insurance and medical work force issues, public health, and Aboriginal health issues. He is assisted by a Parliamentary Secretary responsible for pharmaceutical benefits, Health Services Australia, Australian Hearing Services, and the Therapeutic Goods Administration. The Minister for Aged Care is responsible for aged care services.

The Minister for Veterans' Affairs also administers health services for ex-service personnel and their dependants.

The State and Territory Governments are heavily involved in the direct provision of health services. Each has a minister who is responsible to the Government of the particular State or Territory for the administration of its health authorities. In some States/Territories, the responsibility for health services is shared by several authorities, while in others one authority is responsible for all these functions.

Local governments and private, non-government organisations (both non-profit and for profit) also provide health services. Most medical and dental care is provided by private, non-salaried practitioners.

In recent years, the focus of health and community services has shifted from programs to people. In the process, the Commonwealth

Government has taken responsibility for public health standards and health research, as well as providing benefits for medical, pharmaceutical and aged care services. The States and Territories are primarily responsible for managing and coordinating the provision of services and for maintaining direct relationships with most providers.

Under the National Health Information Agreement (NHIA), to which the Australian Bureau of Statistics, the Australian Institute of Health and Welfare, the Commonwealth Department of Health and Aged Care, and the various State and Territory health authorities are signatories, the National Health Information Development Plan sets out agreed national priorities for health information to be considered by the Australian Health Ministers' Advisory Council. This work is managed by the National Health Information Management Group (NHIMG).

As well, a National Public Health Partnership (NPHP) has been established in recognition of the need for a national effort in public health to improve the health status of Australians, in particular the population groups most at risk. The demand for health information generated by the NPHP is being coordinated with the requirements, the priorities, the participants and the work program established under the NHIA in the public health area.

## Health status

The World Health Organization (WHO) defines health as 'a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity'. While the level of disease or infirmity can be assessed by mortality, disability and morbidity statistics, the presence of positive wellbeing is more difficult to measure. Multidimensional instruments which address physical, mental and social functioning continue to be developed and are increasingly being used to measure health and wellbeing in individuals and populations.

The following health status information includes morbidity and mortality data; disability-related topics are contained in *Chapter 7, Income and welfare*.

## Health and wellbeing

In the most recent National Health Survey (in respect of 1995) conducted by the ABS, the majority (84%) of the population aged 15 years or more considered themselves to be in good health, rating their health status as good, very good or excellent (table 9.1). These ratings were similar among males and females, but were age-related, increasing age being associated with poorer self-assessed health status.

Health status was strongly related to illness conditions. Of the population reporting no medical condition, 34% assessed their health as excellent and 3% rated their health as fair or poor; of the population reporting one or more medical conditions, only 18% assessed their health as excellent and 18% rated their health as fair or poor.

Overall, 88% of the population had at least one recent or long-term illness or injury, with 45% having four or more medical conditions. Both self-assessed health status and number of conditions varied among groups within the population. As measured by these indicators of health status, people in low income households, those not in the labour force and longer term migrants rated worse than other population groups.

## Morbidity

Although almost three-quarters (73%) of the population had more than one condition, many of the conditions experienced were minor, of a temporary nature, and/or easily managed. The most common conditions in 1995 were eyesight disorders of refraction or accommodation, arthritis, hayfever and headaches (table 9.2).

### 9.1 INDICATORS OF HEALTH STATUS(a)—1995

	Self-assessed health status(b)		Number of conditions(c)		
	Good or better	Fair or poor	None or one	Two or three	Four or more
Population characteristics	%	%	%	%	%
Labour force status					
Employed	90.9	9.1	23.0	32.2	44.8
Unemployed	81.5	18.5	28.4	30.6	40.9
Not in labour force(d)	72.0	28.0	30.2	24.5	45.3
Equivalent income(e)					
Low	72.9	27.1	25.9	24.8	49.3
Medium	83.9	16.1	28.8	28.2	43.0
High	91.6	8.4	24.9	31.6	43.6
Birthplace					
Australia	84.4	15.6	27.9	28.7	43.4
Overseas					
Arrived in last 5 years	91.4	8.6	47.1	28.4	24.4
Arrived 5 years or more ago	80.0	20.0	20.8	26.3	52.9
Language at home(f)					
English	84.1	15.9	23.0	28.2	48.8
Other than English	76.2	23.8	36.4	25.5	38.1
<b>All persons</b>	<b>83.5</b>	<b>16.6</b>	<b>26.9</b>	<b>28.2</b>	<b>44.9</b>

(a) Age and sex standardised. (b) Respondents aged 15 years or more. (c) Recent and/or long-term conditions combined.

(d) Includes children and retired persons. (e) Based on Henderson Equivalence Scale. Excludes persons for whom equivalent income could not be derived. (f) Persons aged 6 years or more.

Source: Unpublished data, 1995 National Health Survey.

## 9.2 MOST PREVALENT CONDITIONS(a), By Age—1995

Type of condition	Less than 25	25–44	45–64	65 or more	Total persons	
					%	'000
Sight disorders of refraction and accommodation	16.6	36.9	89.0	96.2	47.1	8 510.4
Arthritis	1.0	8.2	28.3	49.9	14.7	2 658.7
Hayfever	11.5	17.6	14.0	11.8	13.9	2 515.4
Headache	9.7	20.2	13.6	5.8	13.3	2 398.5
Asthma	15.8	9.1	8.4	8.4	11.3	2 041.4
Hypertension	0.5	4.4	20.3	41.4	10.7	1 935.8
Sinusitis	6.0	13.3	13.1	10.6	10.3	1 859.0
Deafness	2.0	6.6	15.4	29.8	9.5	1 724.7
Allergy	7.1	6.5	6.2	4.3	6.1	1 096.8
Injuries	6.2	5.9	4.2	3.2	5.7	1 021.1
<b>All conditions(b)</b>	<b>73.4</b>	<b>87.1</b>	<b>97.3</b>	<b>99.6</b>	<b>85.7</b>	<b>15 478.6</b>

(a) Recent and long-term conditions combined. (b) Only selected conditions are shown. People may have reported more than one type of condition. For these reasons components will not add to the totals shown.

Source: Unpublished data, 1995 National Health Survey.

## Mortality

Information relating to crude death rates and life expectancy is contained in *Chapter 5, Population*.

Mortality patterns from particular diseases can be affected by biological, behavioural and environmental factors and by death certification practices. A comparison of Australia with a number of other developed countries shows that there is considerable variation between countries in the standardised death rate (deaths per 100,000 of population) for some forms of mortality. The causes of mortality selected in table 9.3 are mostly those which have been identified as priority areas by the Australian Health Ministers Advisory Council. To facilitate comparisons, death rates for other countries presented in the table have been standardised on the basis of the

1996 total Australian population. However, when examining the data it must be remembered that the reference years for the countries included vary between 1993 and 1996. Consequently, care should be exercised in making direct or detailed comparisons.

Australia's death rate for malignant neoplasms (cancer) is considerably lower than in most of the other countries selected for comparison. Japan has the lowest death rate from cancer of these countries. However, of the priority areas, it is evident that cancer is the leading cause of death in Australia, as it is in most of the other selected industrialised countries, with the exception of Sweden, where the death rate from ischaemic heart disease far exceeds the cancer death rate.

## 9.3 INTERNATIONAL COMPARISON OF SELECTED CAUSES OF DEATH(a)

Country	Year	Malignant neoplasms	Ischaemic heart disease	Cerebrovascular disease	Diabetes mellitus	Suicide	Motor vehicle traffic accidents
<b>Australia</b>	<b>1996</b>	<b>190</b>	<b>162</b>	<b>70</b>	<b>16</b>	<b>13</b>	<b>11</b>
Canada	1995	195	149	53	19	13	10
Hong Kong	1995	186	67	69	9	12	5
Italy	1993	205	99	100	23	7	14
Japan	1994	165	40	84	8	15	10
Netherlands	1995	214	121	72	14	9	8
New Zealand	1993	217	211	85	14	13	17
United Kingdom	1995	214	200	88	7	7	6
United States of America	1994	199	174	55	17	12	16
Sweden	1995	168	180	72	12	14	5

(a) Standardised rate per 100,000 population.

Source: World Health Organization, 1995 and 1996 World Health Statistics Annual; Causes of Death, Australia, 1996 (3303.0).

The death rate from diabetes mellitus recorded in Australia for 1996, although lower than those observed for Italy, Canada and the USA, is much higher than for the rest of the countries being compared. The standardised death rates for diabetes mellitus for Japan and the UK are about half that of Australia.

Australia's death rate from ischaemic heart disease ranks around the middle of the selected countries, being about four times higher than the rate recorded for Japan, but considerably lower than the rates for New Zealand, the UK and Sweden.

In the case of cerebrovascular disease (stroke), the death rate recorded in Australia is higher than the standardised death rates for Canada, Hong Kong and the USA, but fares well when compared with the other countries, being close to the bottom of the list.

Injury is a significant cause of preventable mortality in Australia. In this comparison, injury death is represented by motor vehicle traffic accidents and suicide in table 9.3. These are the major causes of death in the injury group, which also includes other accidents, poisonings and violence. Australia appears to fare moderately for these causes of mortality when compared with the other selected countries, although the death rate tends to be considerably lower than for most of the other identified causes of death. When comparing the selected countries, the standardised death rate from motor vehicle traffic accidents in Australia is noticeably lower than in New Zealand, the USA and Italy, while suicide death rates are higher in Japan but about half the Australian rate in Italy and the UK.

### Infant deaths

Infant mortality (deaths of children under one year of age), has been traditionally viewed as one indicator of the general level of mortality, health and wellbeing of a population and, as such, has received special attention in public health policy. Conventionally, infant mortality is divided into two components: neonatal (deaths in the first 28 days of life), and postneonatal (deaths in the remainder of the first year of life). The former is heavily influenced by the quality of maternal and neonatal care.

The infant mortality rate was very high at the turn of the century (around 100 deaths per 1,000 live births), but it has declined rapidly since then, falling below 50 by the mid-1920s and below ten in the 1980s. In most years of the

early part of this century, the postneonatal mortality rate accounted for more than half of all infant deaths.

The infant mortality rate continued to decline in recent years, from 10.3 deaths per 1,000 live births in 1982 to 5.8 in 1996, although the decline was not uniform throughout the period. Both rates—neonatal and postneonatal—have declined during the period, with the neonatal rate declining from 6.7 deaths in 1982 to 3.8 in 1996. During the same period, the postneonatal death rate declined from 3.6 to 2.0 (table 9.4).

### 9.4 TRENDS IN NEONATAL, POSTNEONATAL AND INFANT MORTALITY

Year	Neonatal	Postneonatal	Infant
1982	6.7	3.6	10.3
1983	6.0	3.6	9.6
1984	5.5	3.8	9.2
1985	6.2	3.7	9.9
1986	5.4	3.4	8.8
1987	5.1	3.5	8.7
1988	5.3	3.4	8.7
1989	4.7	3.3	8.0
1990	5.0	3.1	8.2
1991	4.4	2.7	7.1
1992	4.6	2.4	7.0
1993	3.9	2.2	6.1
1994	3.9	2.0	5.9
1995	3.7	1.9	5.7
1996	3.8	2.0	5.8

(a) Rate per 1,000 live births.

Source: *Deaths, Australia* (3302.0).

In general, male babies show higher rates of infant deaths than female babies, during both the neonatal and postneonatal periods, for all leading causes. The greater number of deaths among male babies is thought to be the result of the interaction of biological and environmental factors. The risk of death among infants is lower in the neonatal period, where the influence of biological factors is more important than those of the environment.

The identification of births and deaths of Indigenous babies at the national level is still far from complete, except in the Northern Territory, South Australia and Western Australia. The data from these States and the Northern Territory indicate that the overall Indigenous infant mortality rate is approximately four times that of the non-Indigenous population.

## Leading causes

The leading causes of neonatal mortality in the years 1992–96, as a proportion of total neonatal deaths, were perinatal conditions (64%) and congenital anomalies (31%). Perinatal conditions are those related to fetal development or the birth process. The neonatal death rate due to perinatal conditions declined from an average of 353 deaths per 100,000 live births in 1982–86 to 305 in 1987–91, and fell further to 254 in the 1992–96. Extreme immaturity, which refers to infants born with a birth weight of less than 1,000 grams or gestational age of less than 28 completed weeks, is the most frequently reported single condition reported among deaths due to perinatal conditions. In the last 15 years, extreme immaturity accounted for over a quarter of all perinatal deaths, and 17% of all neonatal deaths.

Respiratory distress syndrome (RDS) (a disorder with difficult and laboured breathing and cyanosis) recorded the largest decline among the leading perinatal conditions during the 15-year period from 1982 to 1996. This condition caused, on average 148 neonatal deaths per year in 1982–86, decreasing to 54 in 1992–96. The equivalent average death rate of 61 deaths per 100,000 live births in 1982–86 declined to 21 in 1992–96 (table 9.5). The decline in the death rate for RDS (66%) far exceeded that observed in perinatal conditions as a whole (28%) or in the overall neonatal death rate (33%).

Postneonatal mortality is dominated by one main cause, Sudden Infant Death Syndrome (SIDS). In 1982–86, SIDS accounted for about 52% of all postneonatal deaths, decreasing to 40% in 1992–96. The postneonatal death rate from SIDS declined by 57% from 189 deaths per 100,000 live births in 1982–86 to 81 in 1992–96. This decline was, however, not uniform throughout the 15-year period and was mostly concentrated in the period following 1990 (graph 9.6).

The fall in death rates observed since 1990 could reflect the success of the national health educational campaign launched in that year. The campaign highlighted the risk factors thought to contribute to SIDS such as sleeping posture, feeding practices and exposure to passive smoking.

After SIDS, the leading causes of postneonatal deaths were congenital anomalies (21%) and perinatal conditions (10%). Although these three groups of causes were responsible for 96% of neonatal deaths, they accounted for only 78% of deaths in the postneonatal period. The remaining 22% were spread across a number of groups, the largest of which were diseases of the respiratory system (6%), external causes (6%), diseases of the nervous system (4%), and infectious and parasitic diseases (3%).

Over the 15-year period from 1982 to 1996, approximately 45% of the decline in the infant mortality rate was due to the decline in the postneonatal mortality rate. The sharpest decline occurred after 1990. The cause contributing most to the decline was SIDS.

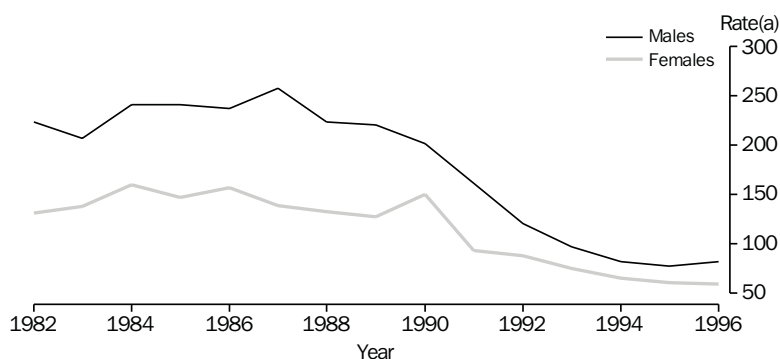
### 9.5 LEADING CAUSES OF NEONATAL AND POSTNEONATAL DEATHS—1982–86 to 1992–96(a)

Cause	1982–86		1987–91		1992–96	
	Neonatal	Postneonatal	Neonatal	Postneonatal	Neonatal	Postneonatal
Diseases of the nervous system	4.5	12.8	3.3	13.2	3.1	11.8
Diseases of the respiratory system	3.0	20.0	1.4	17.1	0.9	13.6
Congenital anomalies	211.8	67.0	156.8	52.7	124.3	44.0
Heart and circulatory system	55.8	28.4	42.0	21.8	36.1	19.5
Nervous system	50.4	14.3	30.4	9.7	21.1	4.3
Chromosomal anomalies	22.9	9.8	21.7	8.2	18.2	5.7
Respiratory system	22.9	3.4	19.0	3.5	15.9	3.4
Perinatal conditions	352.9	24.8	304.9	30.5	254.3	21.4
Extreme immaturity	81.5	0.9	87.5	2.6	81.5	2.4
Respiratory Distress Syndrome	61.4	2.3	46.2	4.6	20.9	0.8
Hypoxia, birth asphyxia and other respiratory	164.3	15.7	131.7	17.5	86.0	8.2
SIDS	13.3	189.3	11.2	171.6	8.4	81.3
Accidents, poisoning and violence	1.8	19.0	2.4	16.9	1.0	13.9
All other causes	8.3	30.4	6.6	23.0	6.0	23.8
<b>All causes</b>	<b>595.6</b>	<b>363.3</b>	<b>486.6</b>	<b>325.0</b>	<b>398.0</b>	<b>209.8</b>

(a) Average annual deaths per 100,000 live births.

Source: *Causes of Infant and Child Deaths, Australia, 1982–96* (4398.0).

## 9.6 POSTNEONATAL DEATH RATES FROM SIDS



(a) Rate per 100,000 live births.

Source: *Causes of Infant and Child Deaths, Australia (4398.0)*.

## National Health Priority Areas

The National Health Priority Areas initiative seeks to focus public health efforts and resources on areas that contribute the greatest burden of illness in the community. It is a collaborative activity between Commonwealth Government, the State and Territory Governments and the non-government sector.

Priorities are established through national consultation taking into account:

- the importance of the disease to the community;
- the impact of the disease (including morbidity, mortality, potential years of life lost, costs to the individual and the community, and consequent inequities such as socioeconomic disadvantage);
- the achievability of improved outcomes; and
- the feasibility of measuring the impact of activities.

At present, five priority areas have been identified—cardiovascular health; cancer control; injury prevention and control; mental health; and diabetes mellitus. For each of these areas, indicators continue to be developed and monitored and program initiatives established to improve health outcomes.

## Cardiovascular health

The high prevalence of cardiovascular disease (CVD) is a major health concern for both health authorities and the general population. It is the leading cause of death in Australia and results in a considerable burden, in terms of illness, disability and economic costs. Although mortality due to CVD is declining, the risk of developing CVD continues to be a concern due to the significant prevalence of modifiable risk factors such as cigarette smoking, high blood pressure, high blood cholesterol levels, obesity and limited physical activity.

In 1996, 42% of all deaths (53,989 deaths) were due to diseases of the circulatory system. Ischaemic heart disease accounted for 23% of all deaths, with cerebrovascular diseases accounting for a further 10%. Between 1981 and 1995, age-standardised death rates for CVD declined by 37%. Over this time period, male CVD death rates decreased from 521 to 314 deaths per 100,000, while female CVD death rates decreased at a slower rate, from 306 to 201 deaths per 100,000.

The prevalence of cardiovascular disease in the adult Australian population increased from 17% (2.2 million) in 1989–90 to 21% (2.8 million) in 1995 (table 9.7). Age and sex standardisation of the data indicated that, over this period, the ageing of the Australian population played only a small part in the increase in prevalence of CVD.



## 9.7 INCIDENCE OF CARDIOVASCULAR CONDITIONS, Persons Aged 18 Years and Over

Type of condition	1989–90		1995	
	'000	%	'000	%
Hypertension	1 535.1	12.3	1 932.5	14.4
Heart disease	440.1	3.5	493.5	3.7
Atherosclerosis	45.7	0.4	25.5	0.2
Stroke (and other cerebrovascular disease)	89.6	0.7	115.7	0.9
Other diseases of the circulatory system	274.8	2.2	694.8	5.2
Ill-defined signs and symptoms of heart conditions	256.2	2.1	337.5	2.5
<b>Total cardiovascular conditions(a)</b>	<b>2 164.7</b>	<b>17.4</b>	<b>2 795.5</b>	<b>20.9</b>

(a) Each person may have reported more than one type of condition, and therefore components may not add to totals.

Source: National Health Survey: Cardiovascular and Related Conditions, Australia, 1995 (4372.0).

Leading cardiovascular conditions in 1995 were hypertension, which was reported by 14% of the adult population, followed by heart disease (4%). Age-specific prevalence rates for cardiovascular conditions increased from 4% for the 18–24 year age group to 61% for the 75 years and over age group. Hypertension, which is also a risk factor for other CVD, was the cardiovascular condition most strongly correlated with age.

## Cancer control

Cancer (malignant neoplasm) is a major cause of morbidity and mortality. It impacts on life expectancy and quality of life and places high demands on preventive, treatment, support and palliative care services. Modification of risk factors and early detection through screening programs are important aspects of cancer control. Seven cancers have been targeted in this priority area—lung cancer; melanoma; non-melanocytic skin cancer; colo-rectal cancer; prostate cancer in males; and cancer of the cervix and breast in females.

The National Cancer Statistics Clearing House reports that each year in Australia about 70,000 new cases of cancer are diagnosed. This equates to an average risk of one in three men and one in four women being directly affected by cancer in their lifetime.

In 1996, 27% of all deaths (34,668 deaths) were due to cancer. Overall, cancer of the trachea, bronchus and lung was the leading cause of cancer deaths, accounting for 20% of all cancer deaths. Among males, leading causes were cancer of the trachea, bronchus and lung (24% of all male cancer deaths) followed by prostate cancer (14%) and colon cancer (10%). Among females, leading causes were breast

cancer (17% of all female cancer deaths) followed by cancer of the trachea, bronchus and lung (14%) and colon cancer (11%). Death rates showed a marked increase with age and were greater for males than females for most age groups (the exception being the 25–54 year age group, due to the contribution of female reproductive cancers).

Information relating to cigarette smoking and alcohol intake, which are modifiable risk factors for some cancers, is contained in the section *Health lifestyles and risk factors*. Sun exposure is another modifiable risk factor that is addressed in ABS National Health Surveys.

Australians are at high risk of skin cancer. Exposure to sunlight is strongly associated with the risk of contracting skin cancers, and therefore sun protection is an important preventive measure. Information from the 1995 National Health Survey indicated that most people (82% of males and 83% of females) had deliberately taken measures in the month preceding the survey to protect themselves against the sun's ultraviolet rays. Males who protected themselves against the sun were more likely to wear a hat than females (81% compared with 62%), and less likely to use a sunscreen than females (47% and 61%). Among children aged less than 15 years, 87% had used some form of sun protection in the previous month, most commonly hats, and 84% reported that they always or usually used sun protection.

Proportions of those who used sun protective measures differed by the State or Territory in which they lived. The lowest rates of sun protection use were recorded by those living in Victoria (72%), the highest by those in Queensland (92%).

Reporting in this survey indicated that 60% of the population regularly checked their skin (or had their skin checked by a doctor) for any changes to freckles and moles. Females were more likely than males to have their skin checked (64% and 56% respectively).

### **Cancer screening**

National breast and cervical cancer screening programs were established during the early 1990s to improve reliability and accessibility of services and to reduce morbidity and mortality arising from these cancers. Free access to breast screening services is provided for women aged 50–69 years; cervical screening is supported though Medicare. These programs are cost-shared between the Commonwealth Government and State and Territory Governments.

In both screening programs, all States and Territories are contributing to the collection and analysis of agreed national minimum datasets to assist revision of policy, monitor program performance and aid the development of targeted strategies. As part of the national monitoring process, ABS National Health Surveys obtain information about breast and cervical screening from women aged 18 years and over.

A screening mammogram is considered to be the most effective method currently available for the detection of breast cancer, particularly in its early stages. The current national program on breast cancer screening recommends that all women aged 50 years and over should be screened every two years. The 1995 National Health Survey showed that, overall, 39% of women had undergone a mammogram at some time in their life, and 66% of those reported having the test less than two years prior to the interview. Women in the 45–64 year age group were most likely to have had a mammogram (70%). The most commonly reported reasons for having a mammogram were general check-up (50%) and the presence of symptoms for breast cancer (e.g. lumps) (24%).

Other actions to detect breast cancer include regular breast examinations. Of women aged 45–64, 56% reported regular breast examination

by a doctor or medical assistant, and 73% reported regularly examining their own breasts.

The current National Women's Health Policy recommends that all women, including those who have no symptoms or history suggestive of cervical pathology, should have a routine Pap smear at least every two years. In 1995, 84% of women had undergone at least one Pap smear, and the majority of those had had their last test within the two years prior to the survey (68%). Women in the youngest age group (18–24 years) and those in the oldest age group (75 years and over) were least likely to have had a Pap smear at some time in their life (38% and 51% respectively had never been tested).

### **Injury prevention and control**

Injuries are a significant source of preventable illness, disability and mortality in Australia, and place a heavy demand on health services. Over the past decade, injuries, poisonings and violence (referred to as external causes) accounted for more than 7,000 deaths per year. These figures include suicides. National hospital statistics for 1995–96 show external causes to be the second leading cause of hospital separations.<sup>1</sup>

In 1996, 6% of all deaths (7,554 deaths) were due to external causes (table 9.8). This represented a 2.2% increase in the age and sex standardised death rate from 1995. Leading external causes of death were suicide which accounted for 32% of all external causes of death, followed by motor vehicle accidents (26%) and accidental falls (15%). Males accounted for 72% of all deaths due to external causes (male death rate of 60 per 100,000 compared with 23 for females). Male death rates for suicide and motor vehicle accidents were over four and two times higher than the respective female rates. Accidental falls were the only external cause with a higher rate for females. Age-specific death rates showed marked increases in deaths due to external causes in the older population (rising from 12 to 367 deaths per 100,000 for males and 7 to 260 for females for the populations aged 1–14 years on the one hand and 85 years and over on the other). Deaths due to accidental falls accounted for most of this age-related increase.

## 9.8 EXTERNAL CAUSES OF DEATH—1996

Cause of death	no.	%	Crude death rate(a)
MALES			
Suicide	1 931	35.6	21.2
Motor vehicle accidents	1 398	25.7	15.4
Accidental falls	523	9.6	5.7
Homicide	223	4.1	2.4
Drowning and submersion	188	3.5	2.1
Poisoning by drugs/medications	218	4.0	2.4
Other	950	17.5	10.4
<i>All external causes</i>	<i>5 431</i>	<i>100.0</i>	<i>59.7</i>
FEMALES			
Suicide	462	21.8	5.0
Motor vehicle accidents	544	25.6	5.9
Accidental falls	579	27.3	6.3
Homicide	103	4.9	1.1
Drowning and submersion	59	2.8	0.6
Poisoning by drugs/medications	79	3.7	0.9
Other	297	14.0	3.2
<i>All external causes</i>	<i>2 123</i>	<i>100.0</i>	<i>23.1</i>
PERSONS			
Suicide	2 393	31.7	13.1
Motor vehicle accidents	1 942	25.7	10.6
Accidental falls	1 102	14.6	6.0
Homicide	326	4.3	1.8
Drowning and submersion	247	3.3	1.4
Poisoning by drugs/medications	297	3.9	1.6
Other	1 247	16.5	6.8
<b>All external causes</b>	<b>7 554</b>	<b>100.0</b>	<b>41.3</b>

(a) Deaths per 100,000 population.

Source: *Causes of Death, Australia, 1996* (3303.0).

The 1995 National Health Survey identified current injuries and injury-related conditions caused by either accidents, incidents (whether intentional or not) or exposures (to a harmful factor). Overall, 2.83 million Australians (16% of the population) reported having an injury or injury-related condition, with 6% of the population reporting an injury and 11% reporting an injury-related condition (table 9.9).

Current injuries were most prevalent among younger age groups, with 15–24 year olds having the highest rates. The most frequently reported types of current injuries were dislocations, sprains and strains, which together affected 1.6% of the population. Injury-related conditions, however, were most prevalent among the middle and older age groups, where the population has had more time to accumulate the long-term effects of injuries. Injury-related deafness (resulting from accident, incident or exposure) was the most common injury-related condition (reported by 1.5% of the population), with 12 times as many males as females affected.

Falls were the most common cause of most recent injury (those injuries which had occurred in the month prior to interview), affecting 188,700 people with a current injury or injury-related condition (1.0% of the population). The most common types of injuries resulting from these falls were dislocations, strains and sprains, with the majority of falls occurring among those aged under 15 years and those aged 65 years or over.

Just over a third of people (37%) with a current injury or injury-related condition had a work related injury or condition (1.1 million people). Injury-related deafness was the most frequent type of work related condition, affecting 232,200 persons. Injury-related deafness was the most common work-related condition among tradespeople, and plant and machine operators and drivers, with around a quarter (26%) of those employed in these two occupational groups affected.

**9.9 PERSONS WITH AN INJURY OR INJURY-RELATED CONDITION, By Sex—1995**

	Males	Females	Persons	Persons
	%	%	%	'000
<b>Injuries</b>				
Fractures	0.6	0.5	0.6	100.0
Dislocations, sprains, and strains	2.0	1.3	1.6	296.1
Open wounds	0.9	0.5	0.7	124.8
Bruising and crushing	0.8	0.6	0.7	126.7
Burns and scalds	0.5	0.5	0.5	84.3
Other injuries	1.3	1.4	1.4	245.9
<i>Total injuries(a)</i>	<i>6.1</i>	<i>4.8</i>	<i>5.5</i>	<i>989.4</i>
<b>Injury-related conditions</b>				
Deafness (partial/complete)	2.8	0.2	1.5	274.4
Disorders of the intervertebral disc and unspecified back problems	3.1	2.1	2.4	440.1
Arthritis	1.5	1.2	1.4	250.7
Other diseases of the musculoskeletal system and connective tissue	3.3	2.3	2.8	500.2
<i>Total injury-related conditions(a)</i>	<i>13.6</i>	<i>7.5</i>	<i>10.5</i>	<i>1 898.4</i>
Total injury and injury-related conditions(a)	19.3	12.1	15.7	2 833.2
No injury or injury related condition	80.7	87.9	84.3	15 227.9
Total Australian population(a)	100.0	100.0	100.0	18 061.0

(a) Only the more frequently reported injury or injury-related conditions are listed. Also, persons may have reported more than one injury or injury-related condition. For both reasons components do not add to totals.

Source: 1995 National Health Survey: Injuries, Australia (4384.0).

**Diabetes mellitus**

The rising prevalence of diabetes in Australia is a major concern in terms of social and economic costs. While rates of hospitalisation and deaths directly attributed to diabetes are low, diabetes is often mentioned as a contributory cause on death certificates and has a major impact on quality of life. People with diabetes experience reduced life expectancy and are more likely than people without diabetes to experience major health complications involving the eyes, kidneys, nerves and arteries.<sup>2</sup> Population groups at particular risk of diabetes are older people, Indigenous people and some sections of the overseas-born population.

In 1996, 2.3% of all deaths (2,991 deaths) were due to diabetes mellitus. Death rates increased with age and were greater for males than females aged 45 years and over. Between 1982 and 1994, the death rate for diabetes mellitus (age standardised death rate per 100,000 total population as at 30 June 1991) increased slightly overall and fluctuated between 12.2 (1982) and 14.5 (1994). However, these figures indicate only the number of deaths in which diabetes was recorded as the underlying cause of death. From 1994, provision was made to identify all deaths where diabetes was mentioned on the death certificate. In 1995, diabetes was mentioned on

8,839 death certificates and therefore could possibly have contributed to 49.0 deaths per 100,000.

The prevalence of diabetes mellitus in the Australian population increased from 1.8% in 1989–90 to 2.4% in 1995. Although small, this increase was statistically significant. Age and sex standardisation of the data indicated that the ageing of the Australian population played only a small part in the increase in prevalence of diabetes. In 1995, of the 2.4% of Australians (430,700 people) who reported that they had been diagnosed with diabetes at some time during their lives, 82% said that they currently had diabetes. Of people ever diagnosed with diabetes, 42% reported non-insulin dependent diabetes, 19% reported insulin dependent diabetes and 6% reported gestational diabetes (table 9.10). The remainder of people with diabetes did not know what type they had. High sugar levels in the blood or urine can indicate diabetes or its precursor known as impaired glucose tolerance. In addition to those reporting a diagnosis of diabetes, 1.2% of Australians (224,800 people) reported having been diagnosed with high sugar levels at some time during their lives. Of this group, 16% reported that they currently had high sugar levels.

**9.10 PEOPLE WITH DIABETES(a), By Type and Sex—1995**

	Males	Females	Persons	Persons
Type of diabetes	'000	'000	'000	%
Non-insulin dependent diabetes mellitus	92.9	88.9	181.8	42.2
Insulin dependent diabetes mellitus	43.7	35.8	79.5	18.5
Gestational diabetes mellitus	—	27.0	27.0	6.3
Diabetes type unknown	69.6	72.8	142.4	33.1
<b>Total diabetes</b>	<b>206.2</b>	<b>224.5</b>	<b>430.7</b>	<b>100.0</b>

(a) Based upon people who reported a diabetes diagnosis at any time during their lives.

Source: National Health Survey: Diabetes, Australia, 1995 (4371.0).

## Mental health

Mental illness causes considerable suffering and disability for individuals and the burden of illness within the community is high. Care of people with mental illness has increasingly shifted from institutions to mental health services provided in the general health sector, such as psychiatric units in general hospitals, and a range of community-based services across the health, housing and community service sectors designed to support individuals and their families.

The National Mental Health Strategy is a joint initiative by Commonwealth and State/Territory Governments that provides a national framework for mental health service and policy reform. The first phase of the Strategy was adopted by all Health Ministers in 1992 and was implemented over five years ending in June 1998. The Commonwealth committed over \$250m to reform of mental health services. Of this, \$189m was provided to State/Territory Governments to reform their mental health services.

Major achievements identified to date by an evaluation of the National Mental Health Strategy include a 55% growth in spending on community mental health services, a 17% increase in general hospital psychiatric beds and greatly improved consumer and carer participation in decision making and advocacy.

On 30 July 1998, Commonwealth, State and Territory Health Ministers endorsed the *Second National Mental Health Plan* as the framework of activity for a renewed National Mental Health

Strategy. The Plan covers a five-year period from 1998–99 to 2002–03. It covers three key areas:

- promotion and prevention through community education and early intervention;
- forging stronger partnerships in service reform and delivery, including consumers and their families, general practitioners, emergency services and the wider health sector; and
- quality and effectiveness through the establishment of benchmarks and service and clinical standards.

The Commonwealth Government will provide \$328m over the next five years to support State and Territory mental health service development and for national reform initiatives.

The need for national information about mental health is therefore of paramount importance. This need is being addressed by a range of projects funded by the Department of Health and Aged Care under the National Mental Health Strategy. A National Survey of Mental Health Services has been conducted since 1993 with results presented in an annual report on the provision of mental health services across States. In addition, three population surveys were funded during 1997, respectively covering adults; children and adolescents; and people with low prevalence disorders such as schizophrenia.

The Survey of Mental Health and Wellbeing of Adults was conducted by the ABS in 1997. Details of this survey are provided in the following article.

## Mental health of Australian adults

### Introduction

The designation of mental health by the Commonwealth Government and the State Governments as one of the five National Health Priority Areas is in recognition of its social and public health importance. In addition to the pain and disability which may be suffered by individuals, mental illness may also burden their families considerably (Human Rights and Equal Opportunities Commission, 1993).

Mental health relates to emotions, thoughts and behaviours. A person with good mental health is generally able to handle day-to-day events and obstacles, work towards important goals, and function effectively in society. However, even minor mental health problems may affect everyday activities to the extent that individuals cannot function as they would wish, or are expected to, within their family and community.

In 1997 the ABS conducted the National Survey of Mental Health and Wellbeing of Adults (SMHWB). The survey was an initiative of and funded by the then Commonwealth Department of Health and Family Services (now the Department of Health and Aged Care (H&AC)) under the National Mental Health Strategy. The survey objectives were to determine the prevalence of selected major mental disorders, the level of disability associated with these disorders, and health services used and help needed as a consequence of mental health problems.

### Measuring mental health

Measuring mental health in the community through household surveys is a complex task as mental disorder is usually determined through clinical diagnosis. For the SMHWB, the diagnostic component of the interview was administered through a modified version of the Composite International Diagnostic Interview (CIDI). This is a comprehensive interview for adults which can be used to assess current and

lifetime prevalence of mental disorders through the measurement of symptoms and their impact on day-to-day activities. The World Health Organization Training and Reference Centre for CIDI in Australia, contracted by the Department of Health and Aged Care, developed a computerised version of the CIDI for the survey.

The CIDI identifies potential symptoms of mental health problems, probes these symptoms to identify the level of severity (or clinical significance) and eliminates those which are always caused by physical intervention such as drugs, medicines, alcohol, illness or injury. Specific combinations of appropriate symptoms may lead to the diagnosis of a mental disorder (e.g. depression).

### Mental disorders

Mental illness can be transient; some people experience their illness only once and fully recover. For others, it recurs throughout their lives. For this survey, the prevalence of mental disorders relates to the occurrence of selected disorders during the 12 months prior to the survey.

Many Australian adults enjoy good mental health. Nevertheless almost one in five (18%) had a mental disorder at some time during the 12 months prior to the survey (table 9.11). The prevalence of mental disorder generally decreased with age (graph 9.12). Young adults aged 18–24 years had the highest prevalence of mental disorder (27%), declining steadily to 6.1% of those aged 65 years and over. From age 35 years, women were more likely to have a mental disorder than men.

While men and women had similar overall prevalence rates, there were differences by type of mental disorder (table 9.11). Women were more likely than men to have experienced anxiety disorders (12% compared with 7%) and affective disorders (7.4% compared with 4.2%). On the other hand, men were more than twice as likely as women to have substance use disorders (11% compared with 4.5%).



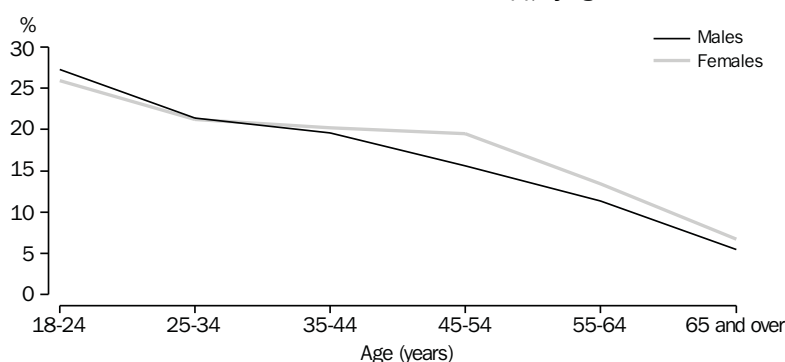
**9.11 PREVALENCE OF DISORDERS OVER 12 MONTHS(a), Australian Adults(b) by Sex**

Disorders	Males		Females		Persons	
	'000	%	'000	%	'000	%
Physical conditions	2 380.2	35.9	2 810.4	41.1	5 190.6	38.5
Mental disorders						
Anxiety disorders	470.4	7.1	829.6	12.1	1 299.9	9.7
Affective disorders	275.3	4.2	503.3	7.4	778.6	5.8
Substance use disorders(c)	734.3	11.1	307.5	4.5	1 041.8	7.7
Total mental disorders	1 151.6	17.4	1 231.5	18.0	2 383.1	17.7
No mental disorder of physical condition	3 543.1	53.5	3 361.3	49.2	6 904.4	51.3
<b>Total(d)</b>	<b>6 627.1</b>	<b>100.0</b>	<b>6 837.7</b>	<b>100.0</b>	<b>13 464.8</b>	<b>100.0</b>

(a) During the twelve months prior to interview. (b) Aged 18 years and over. (c) Includes harmful use of alcohol.

(d) A person may have more than one mental disorder with or without a physical condition. The components when added may therefore be larger than the total.

Source: 1997 National Survey of Mental Health and Wellbeing of Adults.

**9.12 PREVALENCE OF MENTAL DISORDER(a), By Age and Sex**

(a) Mental disorders from the major groups: anxiety, affective and substance use disorders.

Source: 1997 National Survey of Mental Health and Wellbeing of Adults.

**Comorbidity**

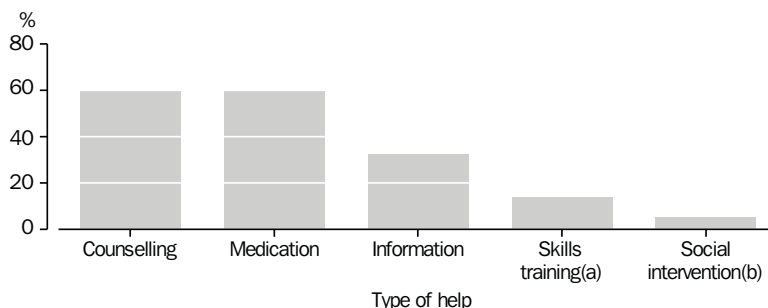
Comorbidity refers to the occurrence of more than one disorder at the same time. The existence of some conditions predisposes individuals to others. For example, severe social phobia may cause depression and alcohol dependence. Further, the presence of mental and/or physical conditions in combination is likely to compound the difficulties that people face.

For people with mental disorders, comorbidity is common. For example, nearly one in three of those who had an anxiety disorder also had an affective disorder while one in five also had a substance use disorder. Of those who had an

anxiety disorder, 8.7% also had both affective and substance use disorders. This group, however, represents less than 1% of the adult population. It should be noted that individuals may have more than one disorder within each of the major groupings. For example, a person categorised as having anxiety disorders may have both social phobia and post-traumatic stress disorder.

For people with mental disorders the patterns of comorbidity differed for men and women. Women were more likely to have anxiety and affective disorders in combination (22%), while men were more likely to have substance use disorders in combination with either anxiety disorders (13%) or affective disorders (8.4%).

**9.13 PERSONS WITH A MENTAL DISORDER WHO USED SERVICES FOR MENTAL HEALTH PROBLEMS, By Help Received**



(a) Help to improve ability to work, to care for self or to use time. (b) Help to sort out practical issues, such as housing or money problems.

Source: 1997 National Survey of Mental Health and Wellbeing of Adults.

### Use of services and perceived need

Of those with a mental disorder, 38% used a health service for a mental health problem in the 12 months prior to interview, with 29% consulting a General medical practitioner (GP), 7.5% a psychiatrist and 6.5% a psychologist. Women were more likely than men to use services for a mental health problem (46% compared to 29%). The likelihood of using health services for a mental health problem was closely related to the type of mental disorder. For example, health services were used by 56% of those with an affective disorder only; such services were used by just 14% of those with a substance use disorder only.

Of those with a mental disorder who used services for mental health problems, 60% received counselling; 60% were given

medication; and 32% were provided with information about mental illness and treatments (graph 9.13).

Some people who received help reported needing more than they received. Around 24% of those who received counselling reported that they needed more counselling; 12% of those who were given medication reported that they needed more medication.

### Reference

Human Rights and Equal Opportunity Commission 1993, *Human Rights and Mental Illness, Report of the National Inquiry into the Human Rights of People with Mental Illness*, AGPS, Canberra.



## Other health areas

### Communicable diseases

Communicable diseases (including infectious and parasitic diseases) are those diseases capable of being transmitted from one person to another, or from one species to another. In 1996, infectious diseases accounted for 1.3% of all deaths in Australia (1,638 deaths). In addition, pneumonia and influenza accounted for a further 1.4% of deaths (1,836 deaths). Death rates increased with age and were greater for males than females aged 45 years and over.

The 1995 National Health Survey found that 4% of the population had experienced a recent and/or long-term infectious or parasitic disease, including herpes and tinea. Of these people, 81% had taken some action for their condition in the two weeks prior to survey, with the most common actions being use of medication and consulting a doctor. In addition, 9% of the population had experienced influenza or the common cold in the two weeks prior to survey.

Infectious diseases accounted for 2% of total hospital separations in 1996–97; acute respiratory infections, pneumonia and influenza accounted for a further 3% of separations.

Under the National Notifiable Diseases Surveillance System, State and Territory health authorities submit reports of communicable disease notifications for compilation by the Commonwealth Department of Health and Aged Care. The range of diseases required to be reported to State and Territory health authorities has varied over time, and case definitions of these diseases have varied from State to State. Since 1991, 42 diseases and disease groups have been included, as recommended by the National Health and Medical Research Council.

Campylobacteriosis, a bacterial disease transmitted by contaminated food or water, has been the most commonly reported disease in recent years (table 9.14). Vaccine-preventable disease notifications (most of which were accounted for by measles, pertussis and rubella) declined from 14,121 to 7,913 over the three year period from 1994 to 1996. Of these, measles showed the most dramatic decline, from 4,895 notifications in 1994 to 498 in 1996. Overall, the number of notifications increased by almost 13% from 1995 to 1996, due largely to the significant increase in notifications of Ross River virus infection.

## 9.14 NATIONAL NOTIFIABLE DISEASE SURVEILLANCE SYSTEM REPORTS(a)

Disease	Notifications			Rate per 100,000 population		
	1994	1995	1996	1994	1995	1996
	no.	no.	no.			
Arbovirus Infection(b)	587	67	52	3.3	0.4	0.3
Barmah Forest virus infection	—	756	837	—	4.7	4.6
Botulism	—	—	—	0.0	0.0	0.0
Brucellosis	34	29	38	0.2	0.2	0.2
Campylobacteriosis	10 117	10 933	12 158	85.8	91.6	100.4
Chancroid	—	2	3	0.0	0.0	0.0
Chlamydial infection(b)	6 159	6 411	8 420	55.3	53.7	69.6
Cholera	3	5	4	0.0	0.0	0.0
Dengue	17	34	43	0.1	0.2	0.2
Diphtheria	—	—	—	0.0	0.0	0.0
Donovanosis	117	85	50	1.1	0.8	0.5
Gonococcal infection	2 971	3 259	4 173	16.7	18.1	22.8
Haemophilus influenzae type b infection	169	74	51	1.0	0.4	0.3
Hepatitis A	1 894	1 601	2 150	10.6	8.9	11.7
Hepatitis B — incident	327	321	225	1.9	1.8	1.2
Hepatitis C — incident	43	69	72	0.6	0.8	0.8
Hepatitis C — unspecified	—	—	9 489	—	—	89.3
Hepatitis(b)	42	55	36	0.3	0.3	0.2
Hydatid infection	56	46	45	0.3	0.3	0.2
Legionellosis	179	160	192	1.0	0.9	1.0
Leprosy	11	7	10	0.1	0.0	0.1
Leptospirosis	123	148	227	0.7	0.8	1.2
Listeriosis	34	58	70	0.2	0.3	0.4
Lymphogranuloma venereum	2	1	0	0.0	0.0	0.0
Malaria	703	625	849	3.9	3.5	4.6
Measles	4 895	1 324	498	27.4	7.3	2.7
Meningococcal infections	383	382	426	2.2	2.1	2.3
Mumps	94	153	128	0.5	1.0	0.9
Ornithosis	85	176	85	0.7	1.5	0.7
Pertussis	5 633	4 297	4 389	31.6	23.8	24.0
Plague	—	—	—	0.0	0.0	0.0
Poliomyelitis	—	—	—	0.0	0.0	0.0
Q fever	667	473	555	3.7	2.6	3.0
Rabies	—	—	—	0.0	0.0	0.0
Ross River virus infection	3 974	2 602	7 823	22.9	14.4	42.7
Rubella	3 315	4 380	2 845	18.6	24.3	15.5
Salmonellosis(b)	5 283	5 895	5 819	29.6	32.7	31.8
Shigellosis	724	734	676	6.1	6.1	5.6
Syphilis	2 324	1 854	1 523	13.0	10.3	8.3
Tetanus	15	7	2	0.1	0.0	0.0
Tuberculosis	1 024	1 073	1 067	5.7	5.9	5.8
Typhoid	50	69	84	0.3	0.4	0.5
Viral haemorrhagic fever(b)	—	—	—	0.0	0.0	0.0
Yellow fever	—	—	—	0.0	0.0	0.0
Yersiniosis(b)	414	306	268	3.5	2.6	2.2
<b>Total</b>	<b>61 726</b>	<b>58 074</b>	<b>65 382</b>	<b>345.9</b>	<b>321.7</b>	<b>357.1</b>

(a) Not all diseases were notifiable in every State and Territory every year. (b) Not elsewhere classified.

Source: Communicable Diseases Intelligence, Vol. 21, No. 20, October 1997.

## HIV and AIDS

Surveillance for human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) is conducted by the National Centre in HIV Epidemiology and Clinical Research in collaboration with the State and Territory health authorities and the Commonwealth Government.

By the end of 1997, 18,743 HIV cases, 7,731 AIDS diagnoses and 5,732 deaths following AIDS had been reported (table 9.15). Surveillance indicates that AIDS incidence peaked during 1994, and a slow but steady decline in incidence is projected. This pattern reflects the decline in new HIV

infections since the sharp peak during the mid 1980s, and the use of new therapeutic regimes may also be contributing to the decline in incidence.

HIV infection continues to overwhelmingly affect males (93%) and disease transmission continues to predominantly occur by sexual contact between men, accounting for about 80% of all HIV transmission in Australia (table 9.16). Although heterosexual contact accounts for only a small proportion of overall disease transmission, this mode of infection is continuing to rise, accounting for 19% of disease transmission in 1997, compared with 3% prior to 1989.

**9.15 NEWLY DIAGNOSED HIV CASES(a)(b), AIDS CASES AND DEATHS FOLLOWING DIAGNOSIS**

	Year of diagnosis										
	Prior to 1989	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total(c)
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
HIV cases	8 196	1 640	1 426	1 414	1 247	1 111	1 033	944	926	787	<b>18 743</b>
AIDS cases	1 334	614	671	802	786	838	948	786	641	311	<b>7 731</b>
AIDS deaths	654	403	514	586	598	691	732	(d)681	(d)563	(d)310	<b>5 732</b>

(a) The number of cases of newly diagnosed HIV infection contained in the National HIV Database has reduced due to the removal of records with no identifying information. (b) Not adjusted for multiple reporting. (c) Includes 19 cases for which the date of HIV diagnosis was not known. (d) Adjusted for reporting delay; deaths following AIDS in previous years were assumed to be completely reported.

Source: *HIV/AIDS and Related Diseases in Australia, Annual Surveillance Report 1998*, National Centre in HIV Epidemiology and Clinical Research.

**9.16 CHARACTERISTICS OF CASES OF NEWLY DIAGNOSED HIV INFECTION(a)(b),  
Number of Cases and Percentage of Total Cases**

	Unit	Year of HIV diagnosis										Total (c)
		Prior to 1989	1989	1990	1991	1992	1993	1994	1995	1996	1997	
<b>Total cases</b>	<b>no.</b>	<b>8 196</b>	<b>1 640</b>	<b>1 426</b>	<b>1 414</b>	<b>1 247</b>	<b>1 111</b>	<b>1 033</b>	<b>944</b>	<b>926</b>	<b>787</b>	<b>18 743</b>
Males(d)	%	94.0	94.3	91.0	92.9	92.1	92.3	90.7	91.5	92.0	88.4	<b>92.8</b>
State/Territory												
New South Wales	%	62.1	60.1	56.5	57.5	57.5	55.9	50.2	58.1	50.8	51.3	<b>58.6</b>
Victoria	%	21.0	19.7	21.5	21.8	20.7	20.5	21.2	17.9	20.1	22.9	<b>20.8</b>
Queensland	%	7.1	9.7	10.3	11.0	12.3	12.4	16.1	12.4	16.8	14.7	<b>10.1</b>
South Australia	%	3.1	4.4	4.5	3.2	2.7	5.0	3.5	3.3	4.9	4.4	<b>3.6</b>
Western Australia	%	4.9	3.9	4.8	5.1	4.3	4.5	6.9	5.9	5.6	4.2	<b>4.9</b>
Tasmania	%	0.2	1.0	0.6	0.4	0.8	0.2	0.2	0.6	0.3	0.0	<b>0.4</b>
Northern Territory	%	0.5	0.4	0.6	0.4	0.5	0.9	0.7	0.1	0.6	1.4	<b>0.5</b>
Australian Capital Territory	%	1.1	0.8	1.1	0.6	1.2	0.5	1.2	1.7	0.9	1.0	<b>1.1</b>
Exposure category(e)												
Male homosexual contact	%	82.9	82.1	78.7	78.7	76.4	78.6	75.0	73.6	75.8	73.4	<b>79.6</b>
Male homosexual contact and injecting drug use	%	2.9	3.1	3.7	3.0	3.7	3.2	5.4	5.0	3.5	3.4	<b>3.4</b>
Injecting drug use(f)	%	4.3	6.3	6.4	4.8	5.2	3.7	3.4	4.4	3.3	3.3	<b>4.5</b>
Heterosexual contact	%	2.7	6.4	9.2	11.6	12.8	13.7	14.2	15.6	16.2	18.8	<b>8.6</b>
Haemophilia/coagulation disorder	%	4.6	0.2	0.4	0.4	0.4	0.0	0.0	0.2	0.0	0.0	<b>2.0</b>
Receipt of blood/tissue	%	2.4	1.5	1.5	1.0	1.1	0.3	0.9	0.4	0.4	0.3	<b>1.5</b>
Mother with/at risk of HIV infection	%	0.1	0.4	0.1	0.5	0.4	0.4	1.0	0.8	0.7	0.8	<b>0.4</b>
Other/undetermined	%	25.9	21.6	24.1	18.5	12.3	11.1	7.2	9.4	11.6	15.4	<b>20.0</b>

(a) The number of cases of newly diagnosed HIV infection contained in the National HIV Database has reduced due to the removal of records with no identifying information. (b) Not adjusted for multiple reporting. (c) Total includes 19 cases for which the date of HIV diagnosis was unknown. (d) Proportion of males among people whose sex was reported. (e) The 'Other/undetermined' category was excluded from the calculation of the percentage of cases attributed to each HIV exposure category. (f) Excludes males who also reported a history of homosexual/bisexual contact.

Source: HIV/AIDS and Related Diseases in Australia, Annual Surveillance Report 1998, National Centre in HIV Epidemiology and Clinical Research.

## Health lifestyles and risk factors

### Diet and nutrition

Food and nutrition have long been recognised as important contributors to health. The need for national information about diet and nutrition has been identified in many forums. As a result, the 1995 National Nutrition Survey was conducted as a joint project between the ABS and the then Commonwealth Department of Health and Family Services in association with other agencies.

The National Health and Medical Research Council's *Dietary Guidelines for Australians* (1991) recommends, in part, that Australians enjoy a wide variety of nutritious foods. In the National Nutrition Survey, all participants were interviewed by trained nutritionists who sought detailed information on all foods and beverages consumed during the day prior to the interview

(from midnight to midnight). Results showed that more than 90% of Australians reported consuming something from the cereal and cereal products, and the milk and milk products foods groups. However, over half the males aged 12–44 years and about a third of children aged 4–11 years had not eaten fruit or fruit products. Further, more than 20% of children aged under 12 years had not eaten vegetables or vegetable products.

Food and beverage intake on the day prior to interview was described in sufficient detail to allow nutrient composition to be determined. Average daily energy intake was 11,050 kJ for men, compared to 7,480 kJ for women. Energy intake increased sharply to a peak of 13,530 kJ for adolescent boys aged 16–18 years and 8,690 kJ for girls aged 16–18 years, and then declined with age.

**9.17 MEAN DAILY ENERGY AND NUTRIENT INTAKE, By Age and Sex**

Nutrients	Unit	2–3	4–7	8–11	12–15	16–18	19 years and over
MALES							
Energy	kJ	6 606.1	7 847.1	9 661.6	11 589.4	13 525.5	11 049.5
Moisture(a)	g	1 620.5	1 731.0	2 055.6	2 482.1	3 241.6	3 426.3
Macronutrients							
Protein	g	55.2	64.3	81.8	101.0	120.0	109.2
Total fat	g	59.1	70.4	86.8	106.2	119.6	98.5
Cholesterol	mg	170.0	195.7	254.1	316.4	393.3	357.6
Total carbohydrate	g	210.1	250.3	304.9	358.1	409.4	300.5
Dietary fibre	g	13.7	16.6	20.6	24.0	26.5	25.9
Alcohol(b)	g	0.0	0.0	0.0	0.0	9.1	18.5
Vitamins							
Vitamin A retinol equivalent	mcg	746.9	771.0	922.0	1 295.6	1 186.1	1 311.7
Folate	mcg	156.6	182.7	225.0	271.3	312.7	306.8
Vitamin C	mg	109.8	105.9	120.7	121.3	153.8	135.6
Minerals							
Calcium	mg	867.2	830.5	937.6	1 092.5	1 280.0	945.5
Iron	mg	8.1	10.3	13.0	16.1	17.9	16.4
Zinc	mg	7.0	8.1	10.2	12.8	14.8	14.4
FEMALES							
Energy	kJ	6 079.3	7 014.3	8 305.4	8 533.6	8 690.4	7 480.9
Moisture(a)	g	1 469.2	1 605.1	1 831.8	2 159.4	2 398.9	2 817.0
Macronutrients							
Protein	g	50.8	57.0	69.1	73.9	80.3	73.9
Total fat	g	55.6	62.5	77.4	77.7	76.4	67.6
Cholesterol	mg	166.1	184.3	226.6	227.4	242.2	239.9
Total carbohydrate	g	190.5	225.2	257.1	264.1	263.6	210.6
Dietary fibre	g	13.0	15.3	16.9	18.6	19.4	20.3
Alcohol(b)	g	0.0	0.0	0.0	0.0	3.9	7.3
Vitamins							
Vitamin A retinol equivalent	mcg	664.2	722.4	903.7	1 130.1	877.3	1 047.2
Folate	mcg	151.3	163.7	188.3	205.5	216.7	232.8
Vitamin C	mcg	93.8	104.4	100.4	123.5	125.6	113.1
Minerals							
Calcium	mg	798.0	704.4	795.6	784.1	801.3	748.6
Iron	mg	7.4	8.9	10.4	11.0	11.1	11.9
Zinc	mg	6.4	7.1	8.6	9.2	10.0	9.7

(a) Includes plain drinking water. (b) Represents pure alcohol.

Source: National Nutrition Survey: Selected Highlights, Australia, 1995 (4802.0).

There was a similar pattern with macronutrients such as fat, carbohydrate and protein, except that female intakes peaked at earlier ages than for males, which is consistent with an earlier adolescent growth spurt for females. Intake of vitamins and minerals, such as vitamin A, niacin, thiamin, folate, calcium, potassium and iron, was also derived from food and beverage intake. As with energy and macronutrients, males consumed larger amounts of vitamins and minerals across all age groups (table 9.17). The influence of age upon intake was not as consistent as it was for macronutrients.

### Breastfeeding

In the 1996–97 Budget, the Commonwealth Government allocated \$1m per year for two years for initiatives aimed at increasing the numbers of Australian women breastfeeding their babies. The funding is being spent on community education, improving support systems for breastfeeding and the monitoring of breastfeeding trends.

Results from the 1995 National Health Survey showed that 86% of children under four years of age were breastfed for some period of time. The proportion of babies who were currently being breastfed declined from 65% of all those less than two months of age, to around 50% at

six months, to less than 10% of those over one year. The average time of being exclusively breastfed was 16 weeks, with solid food most commonly introduced between 17 and 28 weeks. Only 8% of breastfed children were exclusively breastfed for longer than 28 weeks.

### Folate

Folate is a water soluble B vitamin which plays an essential role in metabolism and in the division of all body cells including those in blood.

In the 1996–97 Budget, the Commonwealth Government allocated \$200,000 per year for two years to encourage women of childbearing age to increase their consumption of folate, either from foods or dietary supplements. The consumption of recommended intake of folate by women just prior to and in the early stages of pregnancy has been shown to prevent a significant number of babies being born with a defect of the neural tube, such as spina bifida.

According to the 1995 National Nutrition Survey, 25% of women aged 25–44 had taken a supplement on the day prior to interview, with 2% of this age group having taken a folate supplement. In addition, based on food and beverage intake only:

- mean folate intake for adult females was 232.8 mcg, compared to a recommended intake of 200 mcg; and

- children consumed the smallest average amounts of folate, with intake increasing to a peak for males aged 19–24 years and females aged 45–64 years, and a relatively small subsequent decrease with age.

The percentage contribution of foods to folate intake reflects both the amount of food consumed and the level of folate found in the food. Cereal products, vegetables and milk products provided approximately 55% of folate across ages. Adults obtained a higher proportion of folate from vegetable products and less from milk products than children and adolescents. Adult females obtained 12% of folate intake from regular breads and rolls, 7% from potatoes, and approximately 5% each from cabbage and other brassica vegetables, dairy milk, tea, and fruit juices and drinks.

### Overweight and obesity

Overweight and obesity are risk factors for many health conditions, including ischaemic heart disease, cerebrovascular disease, hypertension, diabetes mellitus, cancer, and respiratory and musculoskeletal conditions.

Based on measured height and weight, results from the 1995 National Nutrition Survey show that almost two in three adult males and just under a half of adult females were overweight or obese (table 9.18). For both males and females, the proportions who were overweight or obese were highest in the 45 to 64 year age group.

**9.18 PERSONS BY BODY MASS INDEX(a), 18 Years and Over**

	Body mass index				
	Underweight	Acceptable weight	Overweight	Obese	Total
	%	%	%	%	%
Males	3.1	32.9	46.1	17.9	100.0
Females	8.9	44.1	30.3	16.7	100.0

(a) Based on National Health and Medical Research Council recommended guidelines.

Source: *How Australians Measure Up* (4359.0).

**9.19 PERSONS SELF-ASSESSED WEIGHT GROUP BY BODY MASS INDEX(a), 18 Years and Over**

Self-assessed weight group	Body mass index			
	Underweight	Acceptable weight	Overweight or obese	Total
	%	%	%	%
<b>MALES</b>				
Considered themselves				
Underweight	32.1	62.3	5.6	100.0
Acceptable weight	2.1	45.7	52.1	100.0
Overweight	0.0	3.7	96.2	100.0
<b>FEMALES</b>				
Considered themselves				
Underweight	58.4	38.0	3.5	100.0
Acceptable weight	11.9	64.8	23.3	100.0
Overweight	0.3	15.3	84.4	100.0

(a) Based on National Health and Medical Research Council recommended guidelines.

Source: *How Australians Measure Up* (4359.0).

When asked to assess their weight, many adults reported themselves in lower weight groups than indicated by their body mass index. Overall, females were more likely than males to accurately report their weight group (table 9.19).

### Physical activity

Regular physical activity is important in the maintenance of good health, and prevention of many health conditions, including ischaemic heart disease, hypertension, diabetes, osteoporosis and obesity.

In December 1996, the Active Australia initiative was launched. This aims to:

- increase and enhance lifelong participation of all Australians in sport, community recreation, fitness, outdoor recreation and other physical activities;
- realise the social, health and economic benefits of participation; and
- develop quality infrastructure, opportunities and services to support participation.

In response to this initiative, health strategies have been developed aimed at improving the health and wellbeing of all Australians by

promoting increased levels of physical activity of moderate intensity. Key strategies include: increasing people's awareness of the benefits of daily or regular participation in exercise, creating opportunities for structured and informal participation in different environments, developing and coordinating infrastructure to support participation, and monitoring the implementation and effectiveness of the strategies.

Some baseline data on the level of participation in exercise were provided by the 1995 National Health Survey. About two-thirds of the adult population exercised for recreation, sport or fitness. Walking was the most common form of exercise. Of those who exercised, 37% only walked, and a further 31% walked and did other forms of exercise. However, while participation in exercise was reasonably high, 69% of adults were classified to sedentary or low exercise levels based on the frequency, intensity and duration of exercise they had undertaken (table 9.20).

While the proportions of males and females who exercised were similar, the patterns of exercise differed. Young adult males were more likely to undertake vigorous or moderate exercise compared with females and older adults.

**9.20 ADULTS BY TYPE OF EXERCISE(a), By Age and Sex—1995**

	18–44 yrs	45–64 yrs	65 yrs or more	Males	Females	Persons
Type of exercise	%	%	%	%	%	%
Did no exercise	30.2	36.2	43.5	33.6	34.4	34.0
Did exercise						
Walking(b)	47.3	51.2	46.6	45.0	53.2	49.2
Moderate(b)	39.9	28.7	23.1	37.8	30.5	34.1
Vigorous(b)	20.5	8.0	2.9	17.8	10.7	15.5
Total(c)	69.8	63.8	56.5	66.4	65.6	66.0
All adults	100.0	100.0	100.0	100.0	100.0	100.0

(a) In previous two weeks. (b) Includes that exercise only, or that exercise in combination with other exercise type(s). (c) Persons may have reported more than one type of exercise, and therefore components will not add to total.

Source: 1995 National Health Survey.

**Drug use****Use of tobacco and alcohol**

Tobacco smoking is a risk factor for heart disease, cerebrovascular disease, peripheral vascular disease, chronic lung disease, and cancer of the lung and other organs.

In the 1995 National Health Survey, 24% of adults (about 3.2 million persons) were smokers (table 9.21). Although the proportion of adults who smoke has declined, most of this decline is attributable to smokers giving up smoking; the proportion taking up smoking has declined only slightly since the late 1970s. Prevalence of smoking was higher among males than females and declined with age.

High levels of alcohol consumption have been linked to an increased risk of heart disease, cerebrovascular disease, neurological disease, liver disease, pancreatic disease, and cancer of the liver and other organs. Alcohol has been identified as a major contributing factor to traffic accidents.

In 1995, 56% of adults consumed alcohol in the previous week (table 9.22), most at levels constituting a low risk to their health. Eight per cent of adults drank alcohol at levels considered by the National Health and Medical Research Council to pose a moderate or high risk to their health.

The average daily intake of alcohol was higher for males than females and declined with age.

**9.21 SMOKER STATUS, By Age and Sex—1995**

	18–44 yrs	45–64 yrs	65 yrs or more	Males	Females	Persons
Status	%	%	%	%	%	%
Smoked	28.9	20.7	11.3	27.3	20.3	23.8
Ex-smoker	21.8	32.2	38.3	32.4	22.5	27.4
Never smoked	49.3	47.1	50.4	40.4	57.1	48.9
All adults	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1995 National Health Survey.

**9.22 ALCOHOL CONSUMPTION(a), By Age and Sex—1995**

	Unit	18–44 yrs	45–64 yrs	65 yrs or more	Males	Females	Persons
Did not consume	%	42.0	44.0	54.5	34.2	54.6	44.5
Consumed	%	58.0	56.0	45.4	65.8	45.4	55.5
Average daily intake(b)	ml	56.7	37.8	25.4	57.6	32.8	47.3

(a) In the previous week. (b) Daily average mls of alcohol consumed by people who consumed alcohol.

Source: 1995 National Health Survey.



According to the 1997 Survey of Mental Health and Wellbeing of Adults, 6.5% of Australians aged 18 years or over had an alcohol use disorder, either as harmful use or abuse. Men were more than twice as likely as women to experience alcohol use disorders (9.4% compared with 3.7%). Young men were particularly prone to these disorders, with 17% of those aged 18–24 being affected. For both men and women, the prevalence of alcohol use disorders declined with age.

### Use of illicit drugs

The 1995 National Drug Strategy Household Survey found that, of persons aged 14 years and over, 31% had tried marijuana/hash at some stage, and 6% had tried hallucinogens and amphetamines. In the 12 months prior to the survey, marijuana/hash had been used by about 13%, amphetamines by 2% and each of the following drugs by less than 1% of respondents: cocaine/crack; hallucinogens; inhalants; ecstasy/designer drugs and injected drugs.

When asked what drugs they thought of when people spoke about a drug problem, marijuana was cited by 31% of respondents, heroin by 28%, alcohol by 13%, tobacco by 5% and cocaine by 4%.

The 1997 Survey of Mental Health and Wellbeing of Adults obtained information on the use of four groups of drugs which included both illegal and prescription drugs. Overall, 2.2% of Australian adults aged 18 years or over had a drug use disorder, either as harmful use or abuse. Men were more than twice as likely as women to experience drug use disorders (3.1% compared with 1.3%). For both men and women, the prevalence of drug use disorders declined with age from a peak of 9.6% for young men aged 18–24 years and 3.6% for women aged 18–24 years.

### Use of medication

Use of medication was the most common action people took for their health in 1995, either as a preventive health measure or as a treatment for illness. Results of the 1995 National Health Survey showed that 69% of the population (12.4 million people) used some form of medication in the previous two week period. Females were more likely to use medications than males: 74% compared with 63%.

Overall, the most commonly used medications were vitamins and mineral supplements (used by 26% of the population), pain relievers (24%) and medicines for heart problems or blood pressure (11%). While the overall use of medications generally increased in older age groups, the types of medications used varied across age groups, reflecting the different illness patterns underlying most medication use (table 9.23).

**9.23 MOST COMMONLY USED MEDICATIONS(a), By Age—1995**

	%
0–14 years	
Vitamins or minerals	16.2
Pain relievers	13.9
For coughs or colds	11.4
15–44 years	
Pain relievers	28.5
Vitamins or minerals	27.7
Skin ointments or creams	11.4
45–64 years	
Vitamins or minerals	31.4
Pain relievers	25.2
For heart/blood pressure	20.2
65 years or more	
For heart/blood pressure	51.7
Vitamins or minerals	26.1
Pain relievers	19.4

(a) In any two week period.

Source: 1995 National Health Survey.

Just as the proportion of people using medication increased in older age groups, so did the number of medications used. Up to middle age groups, over half of those using medication used only one type (over a two week period). In contrast, of those aged 85 years or more using medication, 83% used three or more medications, and almost 40% used four or more.

The Drug Utilisation Sub-Committee, which maintains a database to estimate community use of prescription drugs in Australia, reported that 179 million prescriptions were dispensed in 1997. Of the ten most commonly used prescription drugs in the community, two were antibiotics, two were analgesics, and two were used in the management of hypertension. Other commonly prescribed types of medication were for the treatment of asthma, the management of duodenal and gastric ulcers, insomnia/anxiety and a cholesterol-lowering drug (table 9.24).

## 9.24 MOST COMMONLY USED PRESCRIPTION DRUGS—1997

Drug	Description	No. of prescriptions
Amoxycillin	Antibiotic	5 105 983
Paracetamol(a)	Pain relief	4 763 171
Salbutamol(b)	Used in the management of asthma	4 588 439
Simvastatin	Cholesterol-lowering drug	4 142 227
Codeine with Paracetamol (30mg or more of codeine per dose unit)	Pain relief	3 980 687
Ranitidine	Used in the treatment of duodenal and gastric ulcers	3 401 728
Temazepam	Sedative commonly used in the treatment of insomnia	3 274 990
Enalapril	Used primarily in the management of high blood pressure	3 206 103
Atenolol	Used primarily in the management of high blood pressure	3 000 602
Cefaclor	Antibiotic	2 989 931

(a) This drug is available without a prescription; therefore the number of prescriptions for this drug understates actual community use. (b) Includes an estimate of over the counter use in those States where it is an S3 recordable drug.

Source: Department of Health and Family Services, Drug Utilisation Sub-Committee (DUSC) database, 1997.

## Children's immunisation

Immunisation coverage goals for Australia for the year 2000, recommended by the National Health and Medical Research Council (NHMRC), call for 90% or more coverage of children at two years of age and near universal coverage of children at school-entry age against Diphtheria, Tetanus, Pertussis (Whooping Cough), Poliomyelitis, Measles, Mumps, Rubella and Hib (*Haemophilus influenzae* type b).

The Children's Immunisation Survey conducted by the ABS in April 1995 collected information about the coverage and practices associated with the immunisation of children against those diseases. Immunisation levels were calculated using the NHMRC's current Standard Childhood Vaccination Schedule (August 1994). To be considered fully immunised against a particular condition, a child must have received the specified number of vaccinations against that disease appropriate for his/her age. To be classified as fully immunised against all conditions, a child must have received the specified number

of vaccinations against all conditions listed on the recommended vaccination schedule appropriate for his/her age. The majority of information collected related to children aged three months to six years.

For most conditions, the proportion of children fully immunised declined sharply with age, from high levels at infancy (table 9.25). In part this reflected a failure to obtain the follow-up/booster vaccinations as recommended in the schedule, and in part it reflected recent changes to the schedule. In particular, the relatively low proportions of children fully immunised against Hib may reflect its recent inclusion in the recommended schedule.

As a means of monitoring and better managing childhood immunisation programs, the Australian Childhood Immunisation Register (ACIR) was established and commenced operation on 1 January 1996. The register is administered by the Health Insurance Commission (HIC) on behalf of the Commonwealth Department of Health and Aged Care.

## 9.25 FULLY IMMUNISED CHILDREN, 3 MONTHS TO 6 YEARS, Condition by Age—April 1995

	Diphtheria/Tetanus	Pertussis	Polio	Measles	Mumps	Rubella	Hib
Age	%	%	%	%	%	%	%
3–6 months	92.5	92.0	92.0	—	—	—	76.3
Total less than 1 year	84.0	82.7	83.1	—	—	—	55.4
1 year	88.5	86.2	86.3	85.5	84.7	79.6	62.3
2 years	63.0	57.5	86.9	91.4	90.1	81.1	52.4
3 years	61.5	55.6	87.9	92.8	90.7	79.7	54.7
4 years	64.5	57.4	86.9	93.9	90.7	77.6	57.8
5 years	77.3	68.4	86.5	93.7	92.2	72.5	43.2
6 years	45.2	17.2	60.2	91.7	88.4	62.8	26.6

Source: Children's Immunisation, Australia (4352.0).

The ACIR is essentially a list of all children under the age of seven who are enrolled in Medicare, and includes details of their immunisation. It is estimated that 98.4% of children have Medicare registration by the age of 12 months. Information about children not enrolled in Medicare is included on the register when the HIC is notified of such instances by the various immunisation providers.

At this stage, the ACIR contains immunisation information on two cohorts of children based on date of birth. The first cohort includes children born between 1 January and 31 March 1996, while the second includes those born between 1 April and 30 June 1996. Preliminary estimates of children fully immunised by State and type of vaccine are now available from the register. Summary information is shown in table 9.26.

**9.26 PROPORTION OF CHILDREN FULLY IMMUNISED AT ONE YEAR OF AGE, By State and Territory**

State/ Territory	First cohort (born 1 January 1996 to 31 March 1996)	Second cohort (born 1 April 1996 to 30 June 1996)
	%	%
NSW	71.9	73.2
Vic.	80.8	80.1
Qld	78.2	80.6
SA	63.9	66.9
WA	77.3	77.0
Tas.	75.1	76.0
NT	61.4	61.7
ACT	75.8	77.4
<b>Aust.</b>	<b>74.9</b>	<b>75.9</b>

Source: Australian Childhood Immunisation Register, National Centre for Disease Control, Commonwealth Department of Health and Aged Care.

Currently, the ACIR is considered to underestimate the number of children fully immunised because:

- the register is relatively new and not all providers are supplying details of the immunisations they carry out; and
- there were data flow problems which resulted in an underestimate of the true proportion of immunised children, particularly in Western Australia and the Northern Territory.

## Family planning

The Commonwealth Government provides direct ongoing funding through the Family Planning Program to selected non-government organisations with the aim of providing a comprehensive range of information, education, professional training, counselling and clinical services in sexual and reproductive health to the Australian community. The allocation for 1996–97 was about \$14m.

In the 1995 National Health Survey, 44% of women aged 18–49 reported using a contraceptive method (including methods used by their partner). The most common method was the oral contraceptive pill. Almost one-quarter of women in this age group reported that they or their partner had been sterilised or were otherwise infertile.

## Health care delivery and financing

### Government role

The Commonwealth has a leadership role in policy formulation, particularly in areas such as public health, research and national information management. It funds most non-hospital medical services, pharmaceuticals and health research. With the States and Territories, it jointly funds public hospitals, and home and community care for aged and disabled persons. Residential facilities for aged persons are funded by a number of sources, including the Commonwealth. Public health insurance is provided through Medicare, which is discussed in more detail later in this chapter.

The States and Territories are primarily responsible for the delivery and management of health services, including the regulation of health care providers. They deliver public hospital services and a wide range of community and public health services. For example, State and Territory government funded organisations provide school dental care and dental care for low income earners, with other dental care being delivered in the private sector without government funding. Local governments within States deliver most environmental health programs.

Public hospitals, which provide the majority of acute care beds, are directly funded by government, in addition to receiving revenue from services to private patients. Large urban public hospitals provide most of the more complex types of hospital care such as intensive care, major surgery, organ transplants and renal dialysis, as well as emergency outpatient care. Public hospitals have their own pharmacies which provide medicines to in-patients free of charge and do not attract direct Commonwealth subsidies under the Pharmaceutical Benefits Scheme. This is discussed in more detail later in this chapter.

A small number of doctors and paramedical professionals are salaried employees of the various tiers of government. Salaried specialist doctors in public hospitals are able to treat some private patients in hospital and usually contribute to the hospital a portion of the income earned from fees charged. Other doctors may contract with public hospitals to provide medical services.

### **Private sector role**

The strong private sector, operating in the delivery of health services, receives substantial direct and indirect government subsidies. Within this sector, organisations operating for profit and not for profit organisations play a significant role in providing health services, public health and health insurance. For example, privately owned nursing homes provide the majority of long-term aged care beds.

In the past, private hospitals tended to provide less complex non-emergency care, such as simple elective surgery. However, they are increasingly providing complex, high technology services. Separate centres for non-inpatient operating room procedures are mostly located in the private sector. The private sector includes a large number of doctors and paramedical professionals who are self-employed, generally providing services such as general practice and specialist services, diagnostic imaging, pathology and physiotherapy.

Most prescribed pharmaceuticals dispensed by private sector pharmacies are directly subsidised by the Commonwealth through the Pharmaceutical Benefits Scheme.

An important component of the Australian health care system is private health insurance, which can cover part or all of the hospital charges to private patients, a portion of medical fees for in-patient services, paramedical services and some aids such as spectacles.

### **National health care system**

The national system for the delivery of health care to the majority of Australians is called Medicare. Generally, Medicare covers all permanent residents of Australia. The system is financed largely by general taxes, a proportion of which is raised by an income related Medicare levy. This is discussed in more detail in the following section.

There are four major kinds of Commonwealth health funding mechanisms within Medicare:

- Grants to State and Territory Governments for the operation of public hospitals and a range of other health services;
- Medical benefits, providing patients with rebates on fees paid to privately practising doctors and optometrists;
- Pharmaceutical benefits, via the Pharmaceutical Benefits Scheme (PBS), providing patients with access to a broad range of subsidised medicines; and
- Grants to government and non-government service providers for a range of other health care services (for example, screening programs, services to meet special needs, promotion of efficient and effective use of high technology health care and improvement of general medical practitioner and associated services).

In addition to the specific funding mechanisms mentioned above, part of the general purpose grants provided by the Commonwealth to State and Territory Governments flows to health services.

## Medicare levy

When Medicare began in 1984, the levy was introduced as a supplement to other taxation revenue, to enable the Government to meet the additional costs of this national system.

The Medicare levy, which was increased from 1% to 1.25% of taxable income on 1 December 1986, increased to 1.4% on 1 July 1993 and again increased to 1.5% on 1 July 1995.

For 1997–98, the applicable rate of Medicare levy was retained at 1.5%. No levy is payable by single people with income less than \$13,389 per year or by couples and sole parents with income less than \$22,594 per year, with a further \$2,100 per year allowed for each child.

A Medicare levy surcharge of 1% was introduced from 1 July 1997 for single individuals with taxable incomes in excess of \$50,000 per year, and couples and families with combined taxable incomes in excess of \$100,000. The surcharge applies only to those who do not have private hospital cover through private health insurance.

In recent years, revenue raised by the Medicare levy has been equal to about 20% of total Commonwealth health expenditure and approximately 8.5% of total national health expenditure. In 1997–98, the Australian Taxation Office estimated revenue from the Medicare levy to be \$3.8b.

## Commonwealth government funding of hospitals

In 1997–98, the Commonwealth contributed \$5b in public hospital funding under the Medicare Agreements to the States through the Hospital Funding Grants.

Of this amount, \$4.1b included payments to the States as Base Hospital Funding Grants for the provision of public hospital services. A further \$714m was allocated to the States for bonus payments which are linked, in part, to the level of public activity as an indicator of effectiveness in the delivery of public hospital services.

An additional \$34m was allocated for projects to encourage more effective use of hospital resources and to develop cost-based funding and management systems, with \$59m allocated to support projects that will encourage innovation and accelerate mental health reform.

A further contribution of \$99m was allocated for Other Health Services, including \$71m for Acquired Immune Deficiency Syndrome treatment and \$28m for Palliative Care Services.

## Total health expenditure

In 1996–97, the preliminary estimate of total expenditure on health services (including both public and private sectors) was just over \$43b, compared with just over \$41b in 1995–96. This represented an average rate of health services expenditure in 1996–97 of \$2,345 per person. In 1996–97, governments provided more than two-thirds (68.7%) of the funding for health expenditure, while the remaining 31.3% of the total funding was provided by the private sector. Health expenditure in constant prices grew at an average annual rate of 4.0% between 1984–85 and 1996–97 (table 9.27). In 1996–97, health services expenditure as a proportion of Gross Domestic Product (GDP) remained at 8.5% for the fourth consecutive year.

## 9.27 TOTAL HEALTH EXPENDITURE(a) AND RATE OF GROWTH

Year	Expenditure		Rate of growth	
	Current prices	Constant 1989–90 prices(a)	Current prices	Constant 1989–90 prices(a)
	\$m	\$m	%	%
1982–83	13 239	20 673	..	..
1983–84	14 958	21 960	13.0	6.2
1984–85	16 546	22 862	10.6	4.1
1985–86	18 586	24 180	12.3	5.8
1986–87	21 115	25 341	13.6	4.8
1987–88	23 333	26 287	10.5	3.7
1988–89	26 127	27 719	12.0	5.4
1989–90	28 800	28 800	10.2	3.9
1990–91	31 270	29 422	8.6	2.2
1991–92	33 084	30 203	5.8	2.7
1992–93	34 892	31 393	5.5	3.9
1993–94	36 587	32 589	4.9	3.8
1994–95	38 701	33 957	5.8	4.2
1995–96	41 308	35 716	6.7	5.2
1996–97(b)	43 204	36 768	4.6	2.9
Average annual growth rate 1984–85 to 1987–88	—	—	12.1	4.8
Average annual growth rate 1987–88 to 1992–93	—	—	8.4	3.6
Average annual growth rate 1992–93 to 1996–97	—	—	5.5	4.0
Average annual growth rate 1984–85 to 1996–97	—	—	8.3	4.0

(a) Health expenditure for 1982–83 to 1996–97 is deflated to constant 1989–90 prices using specific health deflators. (b) Based on preliminary AIHW and ABS estimates.

Source: Australian Institute of Health and Welfare, Health Expenditure Data Base.

## Hospitals

### Public hospitals

In 1996–97, there were 727 public acute care hospitals (including one Department of Veterans' Affairs hospital) and 23 public psychiatric<sup>3</sup> hospitals. In the previous financial year, the corresponding figures were 705 and 48.

In 1996–97, the public sector provided 61% of hospital facilities comprising 70% of total hospital beds. These facilities accounted for 67% of total separations, 73% of total patient days, and 63% of same day separations (table 9.28).

In addition to beds in public psychiatric hospitals, there were 2.9 public hospital beds available for acute care per 1,000 population in Australia in 1996–97. This continued the decline in available beds over the decade from 4.1 beds per 1,000 population in 1985–86.

The number of beds available in public psychiatric hospitals in Australia decreased from 2.3 per 1,000 population in 1970 to 0.2 in 1994–95, and has remained at this level in

1995–96 and 1996–97. The substantial reduction in the number of public psychiatric hospital beds in recent years has been the result of moves to deinstitutionalise patients requiring acute or long-term psychiatric care and provide increased continuing care in a community setting. As a result of this reform in mental health services, there has been a corresponding increase in the number of community-based residential services, with bed numbers in these institutions increasing by 40% between June 1994 and June 1996.

Rates of separation for public acute hospitals have increased steadily over recent years, rising from 168 per 1,000 population in 1991–92 to 197 in 1996–97. This increase may be due to several factors including: changes in the age structure of the population; improved reporting by hospitals; and the introduction of a new definition of 'separation' in 1994 designed to capture the episodes of care within the total length of hospital stay. During 1991–92 to 1996–97, the average length of stay fell from 5.2 to 4.5 days. This decline in length of stay in part reflects increasing same day separations, which accounted for 42% of all public acute hospital separations in 1996–97.



**9.28 PUBLIC ACUTE, PRIVATE ACUTE AND PSYCHIATRIC HOSPITALS, Specific Measures—1996–97**

	Unit	Public	Private(a)	Total(a)
Bed supply				
Facilities	no.	727	472	<b>1 199</b>
Beds/chairs	no.	56 836	(b)24 129	<b>80 965</b>
Activity				
Total separations	'000	3 642	1 766	<b>5 408</b>
Same day separations	'000	1 521	902	<b>2 423</b>
Total patient days	'000	16 531	6 080	<b>22 611</b>
Average length of stay	days	(c)4.5	(d)3.8	<b>(d)4.3</b>
Average length of stay excluding all same-day separations	days	7	6	<b>7</b>
Average occupancy rate	%	79.7	(d)69.8	<b>(d)76.9</b>
Total non-admitted services	'000	32 551	1 623	<b>34 174</b>

(a) Includes free-standing day hospital facilities. (b) Annual average total beds/chairs. (c) Includes the Department of Veterans' Affairs hospital in NSW. (d) Excludes free-standing day hospital facilities.

Source: *Private Hospitals, Australia, 1996–97* (4390.0); *Australian Hospital Statistics, 1996–97*, Australian Institute of Health and Welfare.

**Private hospitals**

The ABS Private Health Establishments collection obtained information on facilities, patients, staffing and finances from the 319 private acute and psychiatric hospitals and 153 free-standing day hospital facilities in operation throughout Australia during 1996–97.

The average number of beds available at private acute and psychiatric hospitals for admitted patients increased by 10% to 22,966 between 1992–93 and 1996–97. There were 1.2 private hospital beds available per 1,000 population in 1996–97. The average number of beds or chairs at free-standing day hospital facilities (used mainly for short post-operative recovery periods) increased over the same period by 52% to 1,163. This large increase reflects the substantial growth in the numbers of free-standing day hospitals in recent years.

Private hospital separations in 1996–97 totalled 1.8 million, of which 87% were from private acute and psychiatric hospitals and 13% from free-standing day hospital facilities. Same day separations accounted for 51% of all private hospital separations (compared to 42% of public hospital separations), which contributed to the lower average length of stay in private hospitals (3.8 days compared to 4.5 days) (table 9.28).

The number of full-time equivalent staff engaged at all private hospitals was 41,919, of whom 59% were nursing staff.

Total operating expenditure for private acute and psychiatric hospitals during 1996–97 amounted to \$3,088m, of which 59% was spent on salaries and wages (including on-costs).

Revenue received during the year was \$3,374m, of which 94% was received as payments from or in respect of patients. Total operating expenditure for free-standing day hospital facilities during 1996–97 amounted to \$95.4m and revenue received during the year was \$119.2m.

**Hospital care under Medicare**

Under agreements between the Commonwealth Government and the State/Territory Governments, Medicare provides all eligible people with an entitlement to free accommodation, medical, nursing and other care (including aftercare) as public patients in public hospitals.

Alternatively, patients may choose to be private patients in public hospitals, enabling them to choose their doctors. Medicare-eligible patients who elect to be private patients in public hospitals are charged fees for medical and hospital care. If patients have private insurance, this will usually cover all or most of the charges by a public hospital. Medicare pays benefits subsidising part of the cost of doctors' charges, while private insurance pays an additional amount towards these and other costs (e.g. surgically implanted prostheses) incurred as part of the hospital stay.

Private patients in private hospitals are charged doctors' fees and are billed by the hospital for accommodation, nursing care and other hospital services. If the patient holds private health insurance, it will contribute to the payment of these costs. Eligible Medicare patients in private hospitals generally attract Medicare benefits for doctors' fees.

The rate of Medicare benefit for doctors' services provided to a private patient in hospital is 75% of the Medicare Benefits Schedule (MBS) fee. The MBS lists a wide range of medical service items with a scheduled fee for each item. Registered private health insurers offer insurance to Medicare-eligible patients for the difference between 75% and 100% of the Schedule fee, and in some cases an additional amount agreed with the hospital and doctor to ensure that the patient has no out-of-pocket medical cost.

### **Medicare benefits for private doctors' and optometrists' services**

Costs incurred by patients receiving private doctors' services, and some optometrists' services, are generally reimbursed, either fully or in part, through Medicare benefits. These benefits are administered by the Health Insurance Commission through its Medicare Offices.

MBS fees are used to calculate Medicare benefit entitlements, but doctors are able to determine their own fees, provided the service is not 'bulk-billed'. If the service is bulk-billed by agreement between the doctor and patient, the doctor must accept the Medicare benefit, paid directly to the doctor, as payment in full.

The rate of benefit for outpatient medical services, such as visits to doctors in their rooms, is 85% of the MBS fee. Once the difference between the Schedule fee and benefit is more than \$50.40 (indexed annually) the benefit is the Schedule fee less \$50.40.

In any year, if the sum of the 'gap' payments (being payments above the benefit level and up to the level of the Schedule fee) for non-hospital services for an individual or registered family exceeds a specified amount (\$276.80 for 1998), all further benefits for the remainder of that year are paid at 100% of the Schedule fee.

Private insurers are prohibited from insuring all or part of non-hospital services which attract Medicare benefits.

### **Pharmaceutical Benefits Scheme (PBS)**

The Commonwealth Government provides Medicare-eligible persons with affordable access to a wide range of necessary and cost effective medicines through the PBS.

Under the PBS, Medicare eligible patients who do not hold a Health Care Card, Pensioner Concession Card or Commonwealth Seniors Health Card, need only pay up to the first \$20.00 for each prescription item. Concessional patients who hold a concession card must pay \$3.20 per prescription item.

Individuals and families are protected from large overall expenses for PBS listed medicines by safety nets. For general patients (non-cardholders), once the eligible expenditure of a person and/or their immediate family exceeds \$612.60 within a calendar year, the additional payment the patient has to make per item (co-payment) decreases from \$20.00 to the concessional co-payment rate of \$3.20.

For concessional and pensioner patients (cardholders), once their total eligible expenditure exceeds \$166.40 within a calendar year, any further prescriptions are free for the remainder of that year. All pensioners continue to have their pensions supplemented by a pharmaceutical allowance of \$2.70 per week payable fortnightly, or \$140.40 per year, to help defray their out-of-pocket pharmaceutical expenses. The allowance is not paid to other concessional beneficiaries.

Patients may pay more than the relevant co-payment where there is more than one brand of a drug that produces similar results. The Government subsidises on the basis of the lowest priced brand and any difference must be met by the patient if a more expensive brand is used. The premium is not eligible to be counted towards the patient's safety net.

In 1997-98, the PBS dealt with over 125 million benefit prescriptions, representing a cost to the Government of \$2,541.5m and a total cost, including co-payments, of \$3,112.3m.



The number of PBS prescriptions per capita in 1997–98 remained at 6.7, the same as for 1996–97. The number of benefit prescriptions increased by 0.8% over the previous year and the cost to government of these prescriptions grew by a nominal 8.2%.

The rate of growth in prescription numbers and their cost continues to reflect the ongoing trend towards the prescription of newer and more costly medicines, with PBS government costs continuing to rise as a percentage of GDP from 0.49% in 1996–97 to 0.51% in 1997–98.

While continuing to increase as a percentage of GDP, the rate of growth of the PBS only increased slightly in current prices, from 9.1% in 1996–97 over 1995–96 to 9.7% in 1997–98 over 1996–97. This is below the average 15.3% per annum increase over the period 1992–93 to 1995–96.

The average dispensed price (in current dollars) for PBS medicine in 1997–98 was \$24.88, compared with \$23.20 in 1996–97. Average PBS dispensed price as a percentage of Average Weekly Earnings increased to 3.5% in 1997–98 from 3.4% in 1996–97.

## Private health insurance

Private health insurance is offered by about 44 registered health insurers. It provides benefits additional to Medicare, such as choice of doctor in public and private hospitals, and choice of a shared or private room in hospital.

Insurance for hospital and medical services to people eligible for Medicare is regulated, including a requirement for 'community rating'. This means that private health insurers may not set premiums on the basis of likely claims from certain population groups (e.g. the aged or chronically ill). This in turn necessitates a system of 'reinsurance', enabling insurers to cope with

the higher cost of claims which may be associated with these population groups. It has the additional function of ensuring that individual health funds are not competitively disadvantaged.

## Health insurance coverage

The steady decline in the proportion of the population covered by private health insurance for hospital cover has continued, falling from 45% in June 1990 to 31% in June 1998 (table 9.29).

Health funds also offer ancillary cover which provides benefits towards the cost of a range of services not covered under Medicare. These may include ancillary private dental services, optical, chiropractic, podiatry, home nursing and other services. The proportion of the population with ancillary cover has also declined, but at a slower rate than that for hospital cover.

Results of the 1995 National Health Survey indicated that those most likely to have private health insurance were middle aged, living as part of a couple with or without children and receiving higher incomes. The proportion of people with health insurance declined in older age groups. However, older age groups were more likely to have some health cover by government health cards and, taking private insurance and cards together, over 90% of people aged 65 years or more had some cover additional to Medicare.

Almost half of those people aged 15 years or more who considered themselves to be in excellent or very good health had private health insurance, compared with only one-third of those who rated their health as fair or poor. However, on average, those with private insurance experienced a similar number of serious physical medical conditions as those without insurance.

**9.29 PERSONS WITH PRIVATE INSURANCE, Proportion of Total Population**

	1990	1992	1994	1996	1997	June 1998
	%	%	%	%	%	%
With private hospital cover	44.5	41.0	37.2	33.6	31.9	30.6
With private ancillary cover	39.9	37.5	34.5	32.9	31.6	31.7

Source: Private Health Insurance Administration Council, Quarterly Statistics, June 1998.

## Household expenditure on health and medical care

The 1993–94 Household Expenditure Survey provides estimates of expenditure on medical care and health by households across Australia. Expenditure is net of any refunds and rebates received from Medicare, private health insurance companies and employers.

Household expenditure on medical care and health expenses varies according to the life cycle stage of a household (table 9.30). These changes are associated with changes in household size, the amount of income earned, and the age of household members. For lone persons under 35 years, for whom household size and income are relatively low, expenditure is the lowest (\$10.56 per week). As the cycle progresses and household size and income generally increase, expenditure also generally increases, reaching its highest at the stage when the household consists of a couple with non-dependent children (\$43.42 per week). By the time a household comprises one person only, aged 65 and over, expenditure has decreased to \$12.81 per week.

A more comprehensive picture of expenditure on health and medical care can be constructed by separately identifying government expenditure on health. An ABS study of the effects of government benefits and taxes allocated government health expenditure in 1993–94 to households according to an 'insurance premium' approach. This allocated benefits to persons based on average utilisation rates for their age, sex and State or Territory of residence.

Selected government expenditure in table 9.30 comprises the outlays by government on the provision of health services, including hospital care, medical clinics, pharmaceuticals and other health benefits. Underallocation of government health expenditure occurred because certain populations, such as people living in special dwellings (e.g. boarding houses, hotels and motels, prisons, nursing homes, etc.), are excluded from the Household Expenditure Survey.

**9.30 EXPENDITURE PER HOUSEHOLD ON HEALTH AND MEDICAL CARE—1993–94**

	Unit	Lone person aged under 35	Couple only, reference person aged under 35	Couple with dependent children only		
				Eldest child aged under 5	Eldest child aged 5–14	Eldest child aged 15–20
Average weekly household income (gross)	\$	476.09	963.91	790.94	842.91	1022.40
Average number of persons in household	no.	1.0	2.0	3.4	4.5	4.2
Average weekly household expenditure(a)(b)						
Accident and health insurance(c)	\$	4.12	14.46	15.38	15.95	19.26
Practitioners' fees	\$	4.25	5.13	7.91	8.57	10.22
General practitioner doctor's fees	\$	0.24	0.59	1.38	0.9	0.93
Specialist doctor's fees(c)	\$	0.33	1.19	1.99	1.54	2.02
Dental charges, optician's and practitioner's fees, n.e.c.(c)	\$	3.68	3.37	4.55	6.13	7.27
Medicines, pharmaceuticals, therapeutic appliances and equipment	\$	2.10	4.14	8.84	6.71	7.71
Other health charges	\$	*0.09	*0.34	*1.06	*0.61	*0.77
Total household health expenses	\$	10.56	24.08	33.19	31.83	37.96
Selected government expenditure						
Hospital care	\$	6.56	14.41	26.24	23.62	27.51
Medical clinics	\$	6.44	14.17	28.06	30.25	27.11
Pharmaceuticals	\$	1.36	1.86	4.95	6.39	5.29
Other health benefits	\$	1.39	2.67	4.78	6.36	5.30
Total government health expenditure per household	\$	15.75	33.11	64.03	66.61	65.21

...continued

**9.30 EXPENDITURE PER HOUSEHOLD ON HEALTH AND MEDICAL CARE—1993–94—continued**

	Unit	Couple with		Couple only		
		Dependent and non-dependent children only	Non-dependent children only	Reference person aged 55–64	Reference person aged over 65	Lone person aged over 65
Average weekly household income (gross)	\$	1332.22	1109.61	544.63	389.98	213.12
Average number of persons in household	no.	4.57	3.27	2.00	2.00	1.00
Average weekly household expenditure(a)(b)						
Accident and health insurance(c)	\$	23.77	23.50	17.80	13.66	5.26
Practitioners' fees(c)	\$	11.00	9.11	6.29	5.54	2.42
General practitioner doctor's fees	\$	1.35	0.79	0.44	0.34	0.06
Specialist doctor's fees(c)	\$	2.02	2.37	1.49	1.90	0.83
Dental charges, optician's and practitioner's fees, n.e.c.(c)	\$	7.37	5.96	4.36	3.30	1.53
Medicines, pharmaceuticals, therapeutic appliances and equipment	\$	7.45	9.40	7.40	7.11	4.22
Other health charges	\$	*0.69	*1.40	*0.22	*1.68	*0.91
Total household health expenses	\$	42.91	43.42	31.71	27.99	12.81
Selected government expenditure						
Hospital care	\$	31.04	36.95	30.23	77.21	47.68
Medical clinics	\$	29.63	26.56	20.01	25.67	13.81
Pharmaceuticals	\$	5.67	5.82	5.49	10.85	5.99
Other health benefits	\$	5.61	4.14	3.06	2.48	1.25
Total government health expenditure per household	\$	71.95	73.74	58.79	116.21	68.73

(a) The average obtained when the total estimated expenditure for a particular expenditure item is divided by the estimated number of households within the scope of the survey in the relevant category of household type. (b) Net of refunds and rebates. (c) At least one of the estimates in this row has a relative standard error greater than 25%.

Source: Unpublished data, 1993–94 Household Expenditure Survey.

## Other health services

In addition to hospital services, most medical services in Australia are delivered by private medical practitioners on a fee-for-service basis or by medical practitioners employed in community health centres. Two surveys of the private medical practice industry were conducted by the ABS in respect of the 1994–95 financial year. Information from the surveys about medical practitioners who work in private practice in Australia is contained in *Chapter 21, Service industries*.

Results of the 1995 National Health Survey indicated that 23% of the population (4.2 million people) consulted a medical practitioner recently (within two weeks prior to the

survey), representing over 5.5 million consultations. Around 15% of the population, however, had not consulted a doctor in the last 12 months (table 9.31). The most common reasons for consulting a doctor were respiratory conditions, diseases of the musculoskeletal system and check-up/examination.

Other commonly consulted health professionals included dentists, chemists and chiropractors.

The proportion of people consulting a health professional increased with age and, for most types of practitioner, was higher for females than males.

**9.31 CONSULTATIONS WITH HEALTH PRACTITIONERS(a), By Age and Sex—1995**

	0–14 yrs	15–44 yrs	45–64 yrs	65 yrs or more	Males	Females	Persons
Type of health professional	%	%	%	%	%	%	%
Doctor							
General medical practitioner	17.4	18.3	22.4	35.6	18.5	23.5	21.0
Specialist medical practitioner	2.2	3.7	5.3	6.9	3.5	4.7	4.1
Total(b)	18.9	20.5	25.3	38.5	20.4	26.1	23.3
Dentist(c)	7.5	4.9	6.3	5.4	5.4	6.0	5.7
Chemist	2.6	2.9	1.8	0.9	1.8	2.9	2.4
Chiropractor	0.5	1.9	2.3	1.2	1.4	1.8	1.6
Physiotherapist	0.5	1.7	2.0	1.7	1.5	1.5	1.5
Nurse	2.4	0.9	0.5	2.1	1.1	1.5	1.3

(a) In any two week period. (b) Some people consulted both a general medical practitioner and a specialist medical practitioner and therefore components do not add to total. (c) Persons aged two years or more.

Source: 1995 National Health Survey.

**Health workforce**

In 1997–98, about 280,000 people were employed in health occupations in Australia, according to ABS labour force estimates, comprising about 3.3% of the total number of employed persons. The largest components of the health workforce were registered nurses (148,300) and medical practitioners (34,600 general medical practitioners and 12,800 specialist medical practitioners) (table 9.32).

Males predominated in medical practice, with about 69% of general medical practitioners, and 81% of specialist medical practitioners. Males also predominated in dentistry with 70% of dental practitioners. In contrast, females predominated in nursing (92% of registered nurses) and most allied health occupations (for example, 95% of speech pathologists, 90% of occupational therapists and 82% of physiotherapists).

**9.32 EMPLOYED PERSONS IN HEALTH OCCUPATIONS—Average Over 1997–98(a)(b)**

	Males	Females	Persons
ASCO unit group	'000	'000	'000
Generalist medical practitioners	23.8	10.8	34.6
Specialist medical practitioners	10.4	2.4	12.8
Registered nurses	12.1	136.3	148.3
Dental practitioners	6.2	2.7	8.8
Pharmacists	8.0	7.7	15.6
Occupational therapists	0.5	4.3	4.8
Optometrists	1.2	0.6	1.8
Physiotherapists	2.0	8.9	10.9
Speech pathologists	0.1	1.9	2.0
Chiropractors and osteopaths	1.2	0.2	1.4
Podiatrists	0.3	0.6	0.9
Medical imaging professionals	2.6	3.7	6.3
Other health professionals	0.5	3.4	4.0
<b>Total employed in health occupations(c)</b>	<b>77.0</b>	<b>203.0</b>	<b>280.0</b>
Total employed	4 803.5	3 663.1	8 466.7

(a) Average calculated on quarterly estimates. (b) Where numbers are less than 4,000, errors over 25% may occur. (c) Total is for Health professionals and does not include Health and welfare associate professionals.

Source: Unpublished data, Labour Force Survey.

## Health-related organisations

### International

#### World Health Organization

The World Health Organization (WHO) is a specialised agency of the United Nations having as its objective the attainment by all peoples of the highest level of health. Australia is assigned to the Western Pacific Region, of which the headquarters is in Manila, and is represented annually at both the World Health Assembly in Geneva and the Regional Committee Meeting in Manila. Australia's assessed contribution to WHO's core budget for 1998 was US\$5.9m.

#### The International Agency for Research on Cancer (IARC)

The IARC was established in 1965 within the framework of the WHO. The headquarters of the agency are located in Lyon, France. The objectives and functions of the agency are to provide for planning, promoting and developing research in all phases of the causation, treatment and prevention of cancer. Australia's contribution to the IARC for 1998 was US\$0.9m.

### Australian Government

#### Health and Community Services Ministerial Council

The Health and Community Services Ministerial Council incorporates the Australian Health Ministers' Conference (AHMC), Australian Health Ministers' Advisory Council (AHMAC), Community Services Ministers' Conference (CSMC) and the Standing Committee of the Community Services and Income Security Administrators (SCCSISA).

The Health and Community Services Ministerial Council was formed in 1993 by a decision of the Council of Australian Governments (COAG), bringing together the Australian Health Ministers' Conference and the Community Services Ministers' Conference. This combined Council meets as necessary to deal with the wider framework of health and community service issues of interest to members of both AHMC and CSMC.

The AHMC and its advisory body, the AHMAC, provide a mechanism through which the Commonwealth, State and Territory and New Zealand Governments can discuss matters of mutual interest concerning health policy, services and programs. The AHMC comprises the Commonwealth, State, Territory and New Zealand Ministers responsible for health. Neither the Conference nor the Council has statutory powers, and decisions are reached by consensus.

In 1998, Health Ministers continued to focus on the new Australian Health Care Agreements, Public Health Partnerships, Aboriginal and Torres Strait Islander people's health, national health priorities, national mental health strategies, national rural health strategies and a uniform national framework for control of radiation. Ministers also focused on safety and quality in Australian health care, health information management and technological development, national drugs and poisoning scheduling arrangements, Red Cross Blood Services, and the possible re-use of medical devices. Ministers also considered a range of health industry workforce issues.

Similarly, the CSMC and its advisory body, the SCCSISA, provide a mechanism through which the Commonwealth, State and Territory, New Zealand and Papua New Guinea Governments can discuss matters of mutual interest concerning community services and welfare policy and programs. The CSMC comprises the Commonwealth, State, Territory and New Zealand Ministers responsible for community services and welfare, with an open invitation to the Papua New Guinea Ministers. Neither the Conference nor the Council has statutory powers, and decisions are reached by consensus.

In 1998, Community Services Ministers discussed a wide range of issues relating to child protection, foster care, youth and youth homelessness, inter-country adoptions, aged care and ageing, the development of a family services framework and national standards for child care and children's services.

Ministers with responsibilities for disability services continued discussions and negotiations on the future directions of disability services and development of the new Commonwealth–States/Territories Disability Agreement.

**Department of Health and Aged Care (H&AC)**

The Commonwealth Department of Health and Aged Care provides policy advice and implements Commonwealth government policies on public health, health care, health care funding, and aged care, including the links between aged care and health.

H&AC provides national coordination and monitoring of health and aged care. It promotes outcome-focused planning by governments and investment in prevention of and early intervention in disease, providing incentives for efficient, best practice care. H&AC also represents and promotes Australia's health and aged care achievements and capabilities internationally.

The Department's role in policy advice, and the administration and financing of Commonwealth government health and aged care programs, encompasses the following areas:

- public health and medical research;
- health promotion and disease prevention;
- national drug abuse strategy;
- primary health care of Aboriginal and Torres Strait Islander people;
- health benefits schemes (including Medicare benefits and pharmaceutical benefits);
- general practice and other medical workforce issues;
- acute care;
- mental health;
- regulation of therapeutic goods;
- services for the aged, including carers; and
- community care.

The Department works in association with other agencies in the Portfolio, including the Health Insurance Commission, the Australian Institute of Health and Welfare, the Australian Hearing Services Authority, Health Services Australia, the Australian Radiation Protection and Nuclear Safety Agency, the Private Health Insurance Administration Council, the Private Health Insurance Complaints Commissioner and the Director of Professional Services Review.

**Australian Institute of Health and Welfare (AIHW)**

AIHW is a statutory authority within the Commonwealth Health and Aged Care portfolio. The Institute's mission is to inform community discussion and decision making through national leadership in the development and provision of authoritative and timely information and analysis on the health and welfare of Australians.

The AIHW works closely with other agencies which collect data, produce statistics and undertake research and analysis in the health, welfare and housing assistance fields.

The AIHW also provides support to the States and Territories in the health and welfare areas, primarily through the Australian Health Ministers' Advisory Council, the Standing Committee of Community Services and Income Security Administrators, and State and Territory housing authorities.

The Institute's major divisions are located in Canberra. The Institute also supports three collaborating units: the AIHW National Perinatal Statistics Unit (Sydney); the AIHW Dental Statistics and Research Unit (Adelaide); and the AIHW National Injury Surveillance Unit (Adelaide). In addition, the AIHW jointly funds, with the ABS, the Aboriginal and Torres Strait Islander Health and Welfare Information Unit within the ABS National Centre for Aboriginal and Torres Strait Islander Statistics, Darwin. The National Centre for Classification in Health (which has sites in Sydney and Brisbane) also receives joint funding from the AIHW, the ABS, the Department of Health and Family Services and the Queensland University of Technology.

### National Health and Medical Research Council (NHMRC)

NHMRC is a statutory authority, within the Commonwealth Health and Aged Care portfolio, which provides advice to the Commonwealth Government, the State and Territory Governments and the community on matters relating to individual and public health and on health ethics issues. It also advises the Minister for Health and Aged Care on funding for medical and public health research.

The NHMRC statement of strategic intent is that the NHMRC will work with others for the health of all Australians. This statement is an important step in realising the NHMRC's role in providing collaborative leadership throughout the health sector.

The Council comprises nominees of Commonwealth, State and Territory health authorities, and a nominee of the Aboriginal and Torres Strait Islander Commission, as well as members with expertise in business, trade union, health professional education, medical and allied health services, consumer, environmental and welfare issues.

### The Private Health Insurance Administration Council (PHIAC)

PHIAC is a statutory authority established in June 1989. The main powers and functions of the Council, which are set out in section 82G of the *National Health Act*, are as follows:

- to monitor the financial performance of health funds to ensure that the statutory reserve requirements are being met;
- to administer the reinsurance account arrangements;
- to collect and disseminate financial and statistical data, including tabling of an annual report to Parliament on the operations of health funds;
- to establish uniform reporting standards for funds;
- to impose levies to cover the operating costs of the Council and any unpaid claims of a collapsed fund;
- to receive applications for the review of acute care certificates and application fees, and administer the funding arrangements for the operation of the Acute Care Advisory Committees;

- to obtain from registered organisations, for the purposes of modelling, evaluation and research, information referred to in the Hospital Casemix Protocol;
- to collect and disseminate information about private health insurance, to enable people to make informed choices about private health insurance; and
- to approve the registration of simplified billing agents.

PHIAC disseminates statistics through an annual report and through quarterly reports made available to health funds, the Commonwealth Government and State Governments and other users with an interest in health insurance. The statistics are compiled from registered health benefits organisations' quarterly returns and provide data on membership and coverage, bed days, and benefit paid.

### Australian Quarantine and Inspection Service (AQIS)

AQIS carries significant health-related responsibilities in export inspection, quarantine administration and imported food.

Export inspection activities are derived from the *Export Control Act 1982*, which is the principal legislation for export activities, and subordinate legislation comprising regulations enabled under this Act and Ministerial Orders made under these regulations.

Inspection covers meat, fish, dairy products, processed foods and vegetables, dried fruit, fresh fruit and vegetables, grains, horticultural and plant products, live animals, and some animal products. The aims of the inspectorate are to assist the export of Australian agricultural, forestry and fishery products by providing information, services and facilities that enable exporters to comply with the animal and plant health requirements of importing countries. It also aims to provide effective inspection services for food and other products under AQIS control to ensure that they are safe and wholesome, are informatively described, meet international requirements and facilitate trade.

In 1997–98, AQIS provided inspection for almost \$3b worth of export meat to over 127 destinations.

A range of non-prescribed goods is also inspected and certified on an ad hoc basis where overseas governments require this as a condition of entry of Australian goods.



AQIS quarantine activities derive from the *Quarantine Act 1908* and the *Biological Control Act 1984*. Programs are designed to address the risk of introduction of diseases and pests while enabling the importation of cleared agricultural products. Animal and plant health requirements are negotiated with exporting countries, involving the latest technology for assurance of quarantine safety.

Quarantine activities in some States are contracted to State Departments of Agriculture on the Commonwealth's behalf, and include both monitoring and surveillance elements. In 1997–98, inspections based on risk management principles were undertaken of 7,700 ship arrivals, almost 60,000 first port aircraft arrivals, 7.5 million passengers and aircrew, about one million cargo containers (20 foot equivalent units) and 3.9 million air freight consignments.

Quarantine responsibilities include the administration of animal quarantine stations at Sydney and Melbourne, a high security quarantine station on Cocos (Keeling) Island, and the supervision of a range of plant quarantine stations and private facilities for both animal and plant quarantine.

All food imported into Australia is also subject to inspection under the provisions of the *Imported Food Control Act 1992*. In 1997–98, 33,840 shipments were subject to AQIS clearance, of which 8,906 were automatically released due to the good compliance history of the supplier. The remaining 24,934 shipments were closely inspected and/or analysed, with the result that 1,791 failed to meet the relevant food standards and were denied access to the Australian market place. Where an overseas government's inspection system can be shown to provide safety assurances equivalent to Australia's food inspection system, food accompanied by certification from the agency administering that system is allowed entry with minimal inspection and testing on arrival.

AQIS has significant international involvement in the development of international food safety standards and related aspects of hygiene and manufacturing practice.

## **Cancer registries**

Cancer is a notifiable disease in all States and Territories and is the only major disease category for which an almost complete coverage of incidence data is available. Good information on the occurrence of different types of cancer, on characteristics of patients, and on survival and mortality is essential to provide a sound basis for epidemiological studies and the initiation of new prevention and treatment programs.

The only effective method of obtaining cancer incidence data is through universal registration of cancer cases. Cancer incidence data are available from cancer registries which operate in each State and Territory. These registries are supported by a mix of State and Territory government and anti-cancer council funding.

The National Cancer Statistics Clearing House, operated jointly by the Australian Institute of Health and Welfare and the Australasian Association of Cancer Registries, compiles data produced by State and Territory registries on an ongoing basis and produces national statistics on the incidence of cancer.

## **Communicable Diseases Network—Australia New Zealand**

The Communicable Diseases Network—Australia New Zealand was established in 1990 to enhance the capacity of both countries for communicable disease surveillance and control. It comprises: Commonwealth, State, Territory and New Zealand public health officers; representatives from the Australian Defence Force, the Department of Agriculture, Fisheries and Forestry—Australia, the Australian Institute of Health and Welfare, the Australian Society for Microbiology and the National Centre for Epidemiology and Population Health; and experts in epidemiology and communicable disease control. The Network coordinates the surveillance of communicable diseases through the National Notifiable Diseases Surveillance System and a number of specialised surveillance systems. It also facilitates and coordinates communicable disease control activities where a national response is required.



## Australian non-government

### Asthma Australia

Asthma Australia is an association of the seven State and Territory Asthma Foundations and is the leading authority in asthma education, information, research, community advocacy and support.

The aims of the Association are to eliminate asthma as a major cause of ill health and disruption within the community.

Asthma Australia has strong links with a range of health professionals including respiratory specialists, general practitioners, pharmacists and asthma educators.

### Heart Foundation

The Heart Foundation is a charity—an independent, Australia-wide, non-profit organisation funded almost entirely by donations.

The Heart Foundation's purpose is to improve the heart health of all Australians and to reduce disability and death from heart and blood vessel disease by:

- promoting and conducting research to gain and apply knowledge about heart and blood vessel disease, its prevention and treatment; and
- promoting and influencing behaviour which improves heart and blood vessel health by conducting education and other programs directed at health professionals, those with heart disease and the Australian community at large.

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## Introduction

In Australia, education and training are delivered in four sectors—preschool education; compulsory and post-compulsory schooling; vocational education and training; and higher education (the latter two sectors being known collectively as the tertiary sector).

The term ‘education’ has traditionally been used to denote the processes of obtaining knowledge, aptitudes, skills or socially valued qualities of character and behaviour. Education is regarded as a lifelong process, initiated at birth, developed in schooling and subsequent formal pathways of learning, and continued thereafter. Training is a more specific type of learning, whereby certain skills are developed for subsequent application in the workplace. The value of training lies in its practical relevance.

Historically, the larger part of education has usually been conducted in formal institutions, while training took place at the workplace (or ‘on-the-job’). While education and training maintain different orientations, the distinction between them is no longer clear-cut. Reforms and initiatives in the latter part of the twentieth century have seen education extend even further beyond formal institutions, and training beyond the workplace. Education and training are now both perceived to be parts of a lifelong learning process that enables individuals to take their place in a skilled and changing labour force, to lead fulfilling lives, and to become active members of the community.

Because of the close relationship between education, training and employment, the participation of people in education as well as their transition into the labour force needs to be monitored, as does participation in training and subsequent outcomes. This information is needed to assess the effectiveness of policies and programs designed to increase participation in education and improve skill levels in the labour force.

## Commonwealth and State government responsibilities in education

The governments of the six Australian States and the two Territories have the major responsibility for education, including the administration and substantial funding of primary, secondary, and technical and further education (TAFE). The Commonwealth Government also plays a significant role in education policy, programs and funding. Total government outlays on education in 1996–97 were \$24,480m (see later section, *Expenditure on education*), which represented 4.8% of Gross Domestic Product.

The State Governments administer their own systems of primary, secondary and TAFE education through government departments and agencies responsible to State Ministers.

The Commonwealth Government has direct responsibility for education in Australian Territories (Norfolk Island, Christmas Island and the Cocos (Keeling) Islands) under the Minister for Sport, Territories and Local Government. The Commonwealth Government has special responsibilities for Aboriginal and Torres Strait Islander people, migrants, international relations in education, and assistance for students. The Commonwealth Government also provides special grants to the States and Territories for areas of particular need.

The Commonwealth Government is principally responsible for the funding of higher education institutions, and provides supplementary funding for schools and for TAFE. Apart from its significant financial role, the Commonwealth is involved in promoting national consistency and coherence in the provision of education across Australia.

## Preschool education

All States and Territories have a policy of making preschool education available universally for children in the years prior to school entry. However, there is no national policy on the provision of preschool education. The age at which children may attend preschool varies across States and Territories, and considerable differences exist in the regulation, administration and organisation of preschools.

The 1996 ABS Child Care Survey estimated that 188,200 children less than five years old were attending preschool. This was a 3% fall from the peak in 1993, when 194,400 children less than five years old were attending.

In 1996, three and four year olds made up 92% of children at preschool compared with just 81% in 1993. However, of all children less than five years old in 1993 and 1996, the proportion attending preschool remained steady at 15%.

## Primary and secondary education

### School attendance

School attendance is compulsory throughout Australia between the ages of 6 and 15 years (16 years in Tasmania).

Each State and Territory has its own specific requirements. Most children start primary school at about five years of age. Primary schooling generally begins with a preparatory or kindergarten year, followed by 12 grades to complete a full secondary course of study. While the final two years of schooling generally fall outside the compulsory stage of education, in 1997 84% of students remained at school until Year 11 and 72% remained until Year 12. Retention rates to senior school for Indigenous students, though rising, are less than three-quarters of those of non-Indigenous students, and fall more rapidly between Years 11 and 12.

## School organisation and operation

Primary schooling provides a general elementary program lasting for seven or eight years until Year 6 or 7. Students enter secondary schools at Year 7 in some State systems and at Year 8 in others. Most students attend schools reasonably near to their homes. Usually primary and secondary schools are separate institutions, but in some country areas there are area or central schools which provide both levels of schooling. Secondary education is generally comprehensive and coeducational in both government and non-government schools. Nevertheless, a significant, though declining, proportion of non-government schools are single sex institutions. In Tasmania and the Australian Capital Territory, attendance for the final two years of government schooling is at separate secondary colleges.

Generally, schools in Australia have a considerable degree of autonomy. Most State departments have established regional administrations which are responsible for matters such as planning school buildings and deploying staff, while a central curriculum unit provides general guidelines on course planning. In general, individual schools determine teaching and learning approaches within the given guidelines and offer various course options. In terms of assessment, some States have a completely school-based system, while others combine school-based assessment with external examinations.

### Curriculum, assessment, benchmarks and targets

Curriculum development in Australia is the responsibility of the State and Territory Governments. The Commonwealth Government plays an important role in promoting equity and social justice policies in the delivery of education, and encouraging national collaboration on school curriculum, assessment and reporting matters. The Commonwealth also



has a national leadership role (for the content and delivery of school curriculum and the assessment of student learning outcomes) in responding to the challenges posed by the effects of globalisation and developments in information technology on the social and economic life of all Australians.

Between 1989 and 1993, the Commonwealth, States and Territories collaborated to develop curriculum statements and profiles in each of eight agreed learning areas: English, mathematics, science, technology, studies of society and the environment, the arts, health and physical education, and languages other than English.

The statements provide an account of the aims and content of each area of learning as a framework for curriculum development in primary and secondary schooling. The profiles provide a broad outline of a sequence of students' development of knowledge, understanding and skills as a framework for assessing and reporting student progress and achievements.

All States and Territories are using the statements and profiles in some form for curriculum development, while incorporating variations which reflect local policies and priorities. The profiles reflect and provide the basis for the growing adoption in schools and school systems throughout Australia, of outcomes-based approaches to teaching, learning and assessment, and reporting to parents and the wider community.

The profiles for English and mathematics have informed the national collaborative effort in the area of conceptualising benchmarks for literacy and numeracy.

A review of Australia's National Goals for Schooling in the Twenty First Century, which commenced in 1998, provides the basis for States and Territories and the Commonwealth to collaborate further on the development of targets for student learning outcomes.

### Primary schooling

In primary education, the main emphasis is on the development of basic language and literacy skills, simple arithmetic, moral and social education, health training and some creative activities. Significant progress has been made with the development of literacy and numeracy benchmarks and agreement to their implementation. In April 1998, Education Ministers:

- approved the literacy benchmarks for Years 3 and 5;
- agreed to national trialing of Years 3 and 5 numeracy benchmarks;
- agreed that literacy and numeracy benchmarks be developed for Year 7 during 1998; and
- agreed to examine alternatives for the development of Years 9/10 literacy and numeracy benchmarks.

Literacy and numeracy benchmarks articulate nationally agreed minimum acceptable standards for literacy and numeracy at Years 3 and 5, and enable State and Territory reporting to the Australian community of aggregated student achievement data against common standards, through the National Report on Schooling produced by the Department of Education, Training and Youth Affairs (DETYA).

In the upper primary years the focus is on development of the skills learned in earlier years. English, mathematics, social studies, science, music, art and craft, physical education and health are studied. There are also optional subjects such as religious instruction and, in some schools, foreign and community languages, and instrumental music.

Students in Australian primary schools usually have one teacher for most subjects, and are promoted each year on the basis of completing the previous year, rather than on achievement. In schools where open plan learning styles have been adopted, the method of team teaching (more than one teacher to a class) and multi-age grouping of students is sometimes practised.

### Secondary schooling

In secondary education, in some systems the first one or two years of secondary school consist of a general program which is followed by all students, although there may be some electives. In later years, a basic core of subjects is retained, with students being able to select additional optional subjects. In other systems, students select options from the beginning of secondary school.

The core subjects of the compulsory years, in all systems, involve the eight key learning areas. Optional subjects may include, for example, a foreign language, a further humanities or social science subject, commerce, art, crafts, music, home economics, a manual arts subject, agriculture, physical education or health education.

Students in Australian secondary schools generally have a different teacher for each separate subject area, though, as in primary schools, variations may occur where open plan or more flexible methods have been adopted. Promotion is, again, generally chronological.

In senior secondary years, a wider range of options is available in the larger schools and there is an increasing trend towards encouraging individual schools to develop courses suited to the needs and interests of their students, subject to accreditation and moderation procedures. There is also an increasing emphasis on the incorporation of vocational programs into the senior secondary curriculum. Under the Australian Vocational Training System, students at school may obtain vocational education and training sector certificates as part of their senior study and undertake some parts of their programs in the workplace.

Examinations and assessments at each level are carried out by individual schools, although external examinations exist in some systems at the Year 10 and/or Year 12 levels. Students reaching the minimum school leaving age may leave school and seek employment, or enrol in a vocational course in a TAFE institution or a private business college. For many TAFE courses, completion of Year 10 of secondary school is a minimum entry requirement. For those continuing to the end of secondary school (Year 12), opportunities for further study are available in higher education institutions, TAFE institutions and other tertiary institutions. Students' eligibility to enter higher education institutions is assessed during, or at the end of, the final two years of secondary schooling.

An amount of \$207m was provided in the 1996–97 Budget to establish New Apprenticeships over the period to 1999–2000. New Apprenticeships will expand apprenticeship and traineeship opportunities beyond traditional occupations into industries with new growth and employment potential.

New Apprenticeships will deliver national qualifications and can be accessed through Australian Workplace Agreements, Certified Agreements and Industry Awards. They are becoming available to school students on a

part-time basis. Reforms being introduced in 1998 include user choice of training provider and one-stop-shop support services for people accessing apprenticeships and traineeships.

### **Information and Communications Technologies (ICT) developments in education**

In 1995, the Commonwealth initiated the Education Network Australia (EdNA), a national process for collaboration and cooperation between all sectors of the Australian education and training community, focusing on ICT. One of the major outcomes of EdNA has been the development of the EdNA Directory Service. The Service is a unique Internet site which is technically state of the art and designed to provide users with access to resources and information about schools, universities, vocational education and training, and adult and community education.

### **Number of schools, students and teaching staff**

Of the 9,609 schools operating in Australia in 1997, 7,029 (73%) were government schools operated by the State Directors-General of Education (or equivalent) and 2,580 (26%) were non-government schools (see table 10.1).

Table 10.2 shows the number of students at August 1997 by level of education.

In August 1997, 3,171,624 students were attending primary and secondary schools on a full-time basis, comprising 2,230,052 (70%) in government schools and 941,572 (30%) in non-government schools. The number of full-time students attending government schools increased by 8,495 (0.4%) from the 2,221,557 attending in 1996. The number of full-time students attending non-government schools increased by 20,114 (2%) from the 921,458 attending in 1996 (see table 10.3).

Graph 10.4 shows the percentage of government and non-government schools, as well as proportions of students and school staff in government and non-government schools.

**10.1 SCHOOLS, STUDENTS AND TEACHING STAFF—August 1997**

	Government schools	Non-government schools				All schools
		Anglican	Catholic	Other	Total	
	no.	no.	no.	no.	no.	no.
Schools	7 029	128	1 699	753	2 580	<b>9 609</b>
Students						
Males	1 140 874	49 678	313 245	110 975	473 898	<b>1 614 772</b>
Females	1 089 178	45 447	309 695	112 532	467 674	<b>1 556 852</b>
Persons	2 230 052	95 125	622 940	223 507	941 572	<b>3 171 624</b>
FTE of teaching staff(a)						
Males	50 557	3 248	12 168	6 413	21 828	<b>72 385</b>
Females	94 980	4 343	25 157	10 195	39 695	<b>134 674</b>
Persons	145 536	7 590	37 325	16 608	61 523	<b>207 059</b>

(a) Full-time teaching staff plus full-time equivalent (FTE) of part-time teaching staff.

Source: *Schools, Australia (4221.0)*.**10.2 NUMBER OF STUDENTS, By Level and Year of Education(a)—August 1997**

	Government schools	Non-government schools				All schools		
		Anglican	Catholic	Other	Total	Males	Females	Persons
Year of education	no.	no.	no.	no.	no.	no.	no.	no.
PRIMARY								
Pre-year 1(b)	138 254	2 819	38 349	10 478	51 646	98 155	91 745	189 900
Year 1	198 047	3 573	51 813	14 291	69 677	137 462	130 262	267 724
Year 2	193 698	3 734	50 505	13 970	68 209	134 467	127 440	261 907
Year 3	190 785	4 060	49 638	13 931	67 629	132 131	126 283	258 414
Year 4	187 126	4 241	48 539	14 155	66 935	129 689	124 372	254 061
Year 5	185 012	5 050	48 434	14 813	68 297	129 717	123 592	253 309
Year 6	186 571	5 577	48 418	15 275	69 270	130 808	125 033	255 841
Year 7 (Qld, SA, WA, NT)	74 413	2 677	15 340	6 713	24 730	50 753	48 390	99 143
Ungraded	13 101	10	315	2 064	2 389	9 937	5 553	15 490
<i>Total primary</i>	<i>1 367 007</i>	<i>31 741</i>	<i>351 351</i>	<i>105 690</i>	<i>488 782</i>	<i>953 119</i>	<i>902 670</i>	<i>1 855 789</i>
SECONDARY								
Year 7 (NSW, Vic., Tas., ACT)	103 078	6 351	35 630	12 727	54 708	80 504	77 282	157 786
Year 8	169 750	11 488	53 101	22 104	86 693	131 205	125 238	256 443
Year 9	170 239	11 921	52 297	21 958	86 176	130 985	125 430	256 415
Year 10	161 698	11 769	49 945	22 041	83 755	124 411	121 042	245 453
Year 11	135 029	11 322	42 434	19 931	73 687	102 092	106 624	208 716
Year 12	107 308	10 500	37 592	17 372	65 464	81 723	91 049	172 772
Ungraded	15 943	33	590	1 684	2 307	10 733	7 517	18 250
<i>Total secondary</i>	<i>863 045</i>	<i>63 384</i>	<i>271 589</i>	<i>117 817</i>	<i>452 790</i>	<i>661 653</i>	<i>654 182</i>	<i>1 315 835</i>
TOTAL PRIMARY AND SECONDARY								
<b>Total</b>	<b>2 230 052</b>	<b>95 125</b>	<b>622 940</b>	<b>223 507</b>	<b>941 572</b>	<b>1 614 772</b>	<b>1 556 852</b>	<b>3 171 624</b>

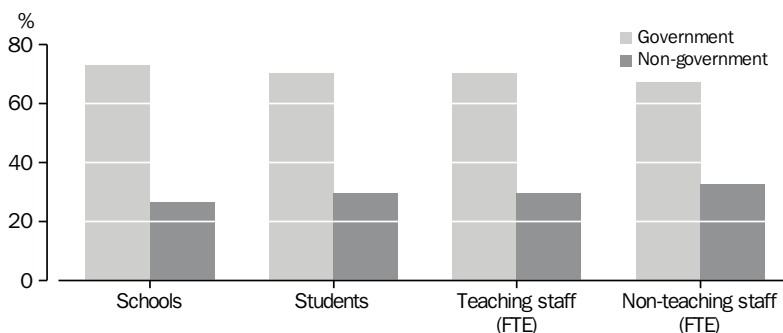
(a) As from 1990, students attending special schools have not been separately identified and have been allocated to either primary or secondary level of education. (b) Pre-year 1 does not exist in Queensland or Western Australia.

Source: *Schools, Australia (4221.0)*.

**10.3 STUDENTS, By Category of School and Sex**

	July 1992	July 1993	July 1994	August 1995	August 1996	August 1997
	no.	no.	no.	no.	no.	no.
Government schools						
Males	1 145 848	1 141 627	1 133 490	1 129 599	1 136 634	1 140 874
Females	1 088 235	1 086 429	1 081 448	1 078 254	1 084 923	1 089 178
Persons	2 234 083	2 228 056	2 214 938	2 207 853	2 221 557	2 230 052
Non-government schools						
Males	435 871	439 003	445 751	454 324	464 109	473 898
Females	429 012	431 316	438 691	447 160	457 349	467 674
Persons	864 883	870 319	884 442	901 484	921 458	941 572
All schools						
Males	1 581 719	1 580 630	1 579 241	1 583 923	1 600 743	1 614 772
Females	1 517 247	1 517 745	1 520 139	1 525 414	1 542 272	1 556 852
Persons	3 098 966	3 098 375	3 099 380	3 109 337	3 143 015	3 171 624

Source: *Schools, Australia* (4221.0).

**10.4 PERCENTAGE OF STUDENTS AND SCHOOL STAFF (FTE(a))—August 1997**

(a) Full-time teaching staff plus full-time equivalent of part-time teaching staff.

Source: *Schools, Australia* (4221.0).

**Other schooling arrangements**

Children may be exempted from the requirement of compulsory attendance if they live too far from a school or suffer a physical disability. These children receive tuition through a variety of educational delivery mechanisms, including correspondence, ICT, and Schools of the Air.

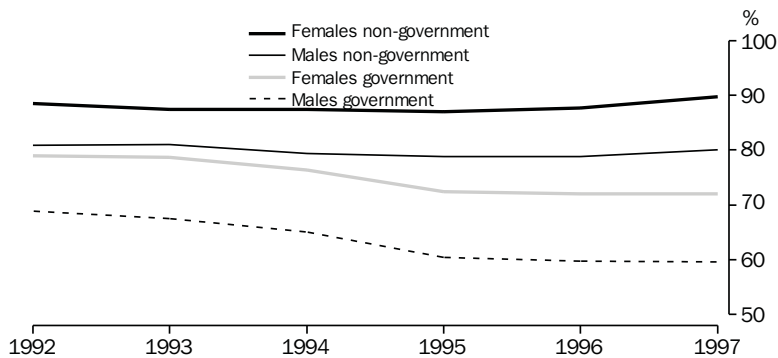
Children of some Indigenous groups in remote areas of the Northern Territory, who have moved away from larger centres into small decentralised communities called outstations or homeland centres, receive schooling from Indigenous teaching assistants supported by visiting teachers from established schools.

Special education is provided by State Governments and non-government authorities in specialist schools, in special classes or units in

regular schools, or by withdrawal from regular classes for periods of intensive assistance by special staff. In all States, and particularly in New South Wales, Queensland and Victoria, parents have formed voluntary organisations to establish additional schools catering for their children's special needs. The Commonwealth Government provides funds to State and non-government authorities and community groups to assist in the provision of services and upgrading of special education facilities.

Boarding facilities are available at some non-government schools, mainly in the larger towns and cities. A small number of government schools, in particular those catering for groups such as Indigenous people, have residential hostels close by.

## 10.5 APPARENT RETENTION RATES TO YEAR 12



Source: *Schools, Australia* (4221.0).

### Apparent retention rates

Apparent retention rates are an important measure of performance of education systems and related government policies. The apparent retention rate is the percentage of students of a given cohort who continued to a particular level/year of education. In graph 10.5, apparent retention rates have been calculated for full-time students who continued to Year 12 from their respective cohort group at the commencement of their secondary schooling.

The apparent retention rate of secondary school students to Year 12 rose slightly from 71.3% in 1996 to 71.8% in 1997. The rate varied across States and Territories, ranging from 42.0% in the Northern Territory to 91.6% in the Australian Capital Territory. The apparent retention rate increased between 1996 and 1997 in most States and Territories, but there was a slight decrease in New South Wales and South Australia. As in previous years, the retention rate for female students (77.8%) was higher than the corresponding rate for males (66.2%).

Care should be taken in interpreting apparent retention rates since a range of factors affecting their calculation has not been taken into account. At the national level, these include the effects of students who repeat a year of education, migration, and other changes to the school population, such as full-fee paying overseas students.

Comparisons between government and non-government schools should be made with caution because of the net transfer of students

from government to non-government schools, which tends to inflate the non-government school retention rates and reduce the government school rates.

### Funding of schools

In 1996–97, Australian governments outlaid \$13,916m on primary and secondary education, and a further \$1,340m on preschool and other special education. They also spent large sums on other aspects of schooling such as transporting students. State/Territory and local governments provided 74% of the government funding for preschool, primary, secondary, and other special education, and all of the government costs of student transportation.

Major responsibility for funding government primary and secondary schools lies with State Governments, which provide about three-quarters (74%) of schools' running costs, and the remainder is derived from contributions by the Commonwealth. Data published by the Ministerial Council on Education, Employment, Training and Youth Affairs show that in 1996 non-government schools derived 45% of their income from private sources, 38% from the Commonwealth Government, and 18% from State grants.

Non-government schools operate under conditions determined by government authorities, usually registration boards, in each State and Territory. These conditions require that minimum education standards are met and that the schools have satisfactory premises. The majority of non-government schools are

Catholic, and there is a Catholic Education Commission in each State and Territory and at the national level. Most other non-government schools are under the auspices of, or run by, other religious denominations.

Primary and secondary education is free in government schools in all States and Territories. Fees may be charged, however, for the hire of text books and other school equipment, particularly in secondary schools.

Most State Governments provide financial assistance to parents under specified conditions for educational expenses. Assistance includes various types of scholarships, bursaries, transport and boarding allowances, many of which are intended to assist low-income families. The Commonwealth Government also provides a number of schemes of assistance to facilitate access to education.

## Tertiary education

Tertiary education is mainly provided in universities, TAFE institutions and other Vocational Education and Training (VET) institutions such as theological colleges, private business and commercial colleges and secretarial colleges.

There are 36 public institutions of higher education in the Unified National System (UNS) and one private university (Bond University in Queensland) recognised by the Australian Vice-Chancellors' Committee. Institutions within the UNS receive Commonwealth funding

according to an academic profile agreed between them and the Government. In addition, there are a number of smaller public institutions outside the UNS which receive Commonwealth funding on a contract basis, and one other private institution (Notre Dame University in Western Australia), all of which are teaching at university level.

Apart from the Australian National University, the University of Canberra and the Australian Maritime College (not a member of the UNS), which are established under Commonwealth legislation, Australian universities operate under State legislation. They are autonomous bodies responsible for their own governance and make their own decisions on, for example, matters of allocation of their funding, staffing and academic courses.

In 1997, 1,000 TAFE and other government training provider locations delivered VET training in that year. There were also 599 community centres and 1,477 other registered providers delivering VET.

Primary responsibility for administration of the TAFE system lies with the State and Territory Governments. Funding is provided primarily by the State and Territory Governments (59% in 1996–97), with additional funds being provided by the Commonwealth Government (41%).

## Higher education

During 1997, 77% of all higher education staff were employed full time, 10% part time and 13% as casuals (see table 10.6).

**10.6 HIGHER EDUCATION STAFF(a)—1997**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Multi-State(b)	Aust.
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
Full-time										
Males	10 608	8 087	6 114	2 726	3 524	928	256	2 503	277	35 022
Females	8 313	6 574	5 167	2 170	2 700	530	264	1 633	397	27 749
Persons	18 921	14 662	11 281	4 896	6 224	1 458	519	4 136	674	62 771
Part-time										
Males	631	763	294	152	218	45	6	88	13	2 208
Females	1 510	1 817	754	507	633	105	21	289	65	5 702
Persons	2 141	2 579	1 047	659	852	150	27	376	78	7 910
Casual										
Persons	3 217	2 737	1 805	863	1 227	220	80	446	128	10 723
<b>Total</b>	<b>24 279</b>	<b>19 978</b>	<b>14 133</b>	<b>6 418</b>	<b>8 303</b>	<b>1 828</b>	<b>627</b>	<b>4 959</b>	<b>880</b>	<b>81 404</b>

(a) Full-time staff plus full-time equivalent of part-time and casual staff. (b) Australian Catholic University.

Source: Department of Employment Education, Training and Youth Affairs, 'Selected Higher Education Staff Statistics, 1997'.

Of persons employed full time, 44% were female. Only the Northern Territory had a higher proportion of full-time female staff (51%) than full-time male staff. Overall, females were much more likely than males to work part time. Almost three-quarters (72%) of all part-time higher education staff were female. In no State or Territory did the proportion of male part-time staff exceed 30%.

Students commencing higher education courses will have completed a full secondary education, or will have demonstrated that they have a high probability of successfully completing a course. There is keen demand for higher education places at most institutions.

Higher education institutions offer a great variety of courses embracing such areas as agriculture, architecture, arts, business, dentistry, economics, education, engineering, health, law, medicine, music, science and veterinary science. Fields of study with the largest numbers of award course students in 1997 were Arts, humanities and social sciences (23%); Business, administration and economics (23%); and Science (15%) (see table 10.7).

Higher education institutions are funded by the Commonwealth under the *Higher Education Funding Act 1988*. In 1996, the operating revenue of UNS institutions amounted to \$8,052m, 57% of which came from Commonwealth Government Grants. Commonwealth Government funding is also provided to higher education institutions through various research programs, mostly on the advice of the Australian Research Council.

In addition to government funding, institutions receive payments from students who are required to contribute to the cost of their education through the Higher Education Contribution Scheme (HECS), and from other

fee paying students. In 1996, 12% of operating revenue was raised from HECS. Fees and charges (excluding HECS) accounted for a further 13% of income. Other higher education income sources include investments, State Government grants, donations and bequests.

The basic undergraduate course at most institutions is a bachelor degree course of three or four years' duration. At some institutions, courses may also be offered at the diploma or advanced diploma level. All institutions in the UNS also offer postgraduate level study. One to two years of full-time postgraduate study are required for a master's degree and three to five years for a doctoral degree. Postgraduate diplomas and certificates are offered in some disciplines. In 1997, 75% of higher education students were enrolled in bachelor courses, with a further 21% enrolled in higher degree and other postgraduate courses (see table 10.7).

All UNS institutions provide full-time and part-time courses. In addition, some institutions offer courses which associate full-time study with periods of employment. Distance education courses are also offered. Students can also enrol in higher education courses through the Open Learning Agency of Australia Pty Ltd (OLAA). In 1997, there were 8,267 students enrolled in OLAA programs.

The system of tuition in higher education institutions is normally by means of lectures, tutorials, seminars and supervised practical work. In general, assessment of a student's progress is made by examination and/or completion of prescribed coursework or of individual research.

The accompanying tables on higher education show a range of statistics about students and courses.



**10.7 HIGHER EDUCATION STUDENTS, Level of Course and Field of Study—1997**

	Agriculture, animal husbandry	Architecture, building	Arts, humanities and social sciences	Business, administration, economics	Education
Level of course	no.	no.	no.	no.	no.
Higher doctorate	—	—	2	—	81
Doctorate	896	249	6 267	2 059	2 408
Master's by research	389	276	3 791	770	1 226
Master's by coursework	197	814	8 031	18 228	8 049
Postgraduate qualifying/preliminary	13	67	129	269	58
Graduate (post) diploma — new area	282	517	5 430	6 987	8 519
Graduate (post) diploma — extension area	78	244	1 631	2 682	2 505
Graduate certificate	102	371	720	3 223	1 490
Bachelor's graduate entry	—	699	825	35	3 538
Bachelor's honours	106	111	4 923	959	223
Bachelor's pass	6 376	11 724	128 174	123 713	43 452
Advanced diploma	1 453	10	613	302	491
Diploma	1 898	105	1 574	507	400
Other award course	289	—	489	1 252	139
Enabling courses	58	—	2 263	62	931
Non-award courses	—	—	—	—	—
<b>Total courses</b>	<b>12 137</b>	<b>15 187</b>	<b>164 862</b>	<b>161 048</b>	<b>73 510</b>

	Engineering, surveying	Health	Law, legal studies	Science	Veterinary sciences	Total
Level of course	no.	no.	no.	no.	no.	no.
Higher doctorate	1	104	12	2	—	202
Doctorate	2 320	3 052	352	6 573	183	24 359
Master's by research	1 276	1 052	172	1 948	56	10 956
Master's by coursework	2 316	5 839	2 136	3 686	72	49 360
Postgraduate qualifying/preliminary	70	375	62	162	—	1 205
Graduate (post) diploma — new area	663	3 695	695	3 666	8	30 354
Graduate (post) diploma — extension area	542	3 780	531	1 190	4	13 187
Graduate certificate	490	1 023	438	345	—	8 177
Bachelor's graduate entry	1	761	1 280	21	—	7 160
Bachelor's honours	902	721	436	3 795	16	11 498
Bachelor's pass	40 577	53 670	22 736	79 903	1 300	477 706
Advanced diploma	89	82	—	464	—	3 504
Diploma	156	832	972	842	—	7 286
Other award course	565	89	703	621	—	4 147
Enabling courses	45	86	—	483	—	3 928
Non-award courses	—	—	—	—	—	5 798
<b>Total courses</b>	<b>50 013</b>	<b>75 161</b>	<b>30 525</b>	<b>103 701</b>	<b>1 639</b>	<b>658 827</b>

Source: Department of Employment, Education, Training and Youth Affairs, 'Selected Higher Education Student Statistics, 1997'.



As can be drawn from table 10.8, the proportion of higher education students who are female has risen slightly from 53% in 1991 to 54% in 1997. Higher education students are predominantly in the younger age groups—60% were 24 years old or under in 1997. Of these younger higher education students, 55% were female.

In 1997, 59% of students were enrolled in full-time study, 27% in part-time study and 13% in external studies (including non-award courses). Between 1991 and 1997, the total number of students rose 23%. The greatest rate of growth (54%) was for those studying externally (see table 10.9).

**10.8 HIGHER EDUCATION STUDENTS(a), By Age and Sex**

	1991	1992	1993	1994	1995	1996	1997
	no.	no.	no.	no.	no.	no.	no.
19 and under							
Males	74 820	71 186	68 660	69 757	70 683	73 151	76 017
Females	96 617	93 427	90 794	91 958	93 997	98 639	102 354
Persons	171 437	164 613	159 454	161 715	164 680	171 790	178 371
20–24							
Males	80 304	87 542	92 101	92 415	94 182	97 331	100 953
Females	79 967	89 877	97 397	98 810	101 455	106 550	112 814
Persons	160 271	177 419	189 498	191 225	195 637	203 881	213 767
25–29							
Males	32 334	34 152	35 397	36 239	37 661	39 963	42 496
Females	30 693	32 557	33 671	35 051	37 858	41 306	44 384
Persons	63 027	66 709	69 068	71 290	75 519	81 269	86 880
30 and over							
Males	62 218	67 673	71 828	73 568	76 294	79 427	80 706
Females	77 585	82 951	85 769	87 598	92 047	97 727	99 103
Persons	139 803	150 624	157 597	161 166	168 341	177 154	179 809
Total							
Males	249 676	260 553	267 986	271 979	278 820	289 872	300 172
Females	284 862	298 812	307 631	313 417	325 357	344 222	358 655
Persons	534 538	559 365	575 617	585 396	604 177	634 094	658 827

(a) Includes students in enabling and non-award courses.

Source: Department of Employment, Education, Training and Youth Affairs, 'Selected Higher Education Student Statistics, 1997'.

**10.9 HIGHER EDUCATION STUDENTS, By Type of Enrolment and Sex**

	1991	1992	1993	1994	1995	1996	1997
	no.	no.	no.	no.	no.	no.	no.
Internal							
Full-time							
Males	153 210	158 175	160 357	161 374	165 288	171 680	179 098
Females	175 197	181 029	183 222	183 615	189 996	200 636	212 356
Persons	328 407	339 204	343 579	344 989	355 284	372 316	391 454
Part-time							
Males	71 652	75 867	79 548	80 212	80 767	81 259	82 819
Females	77 557	83 449	88 534	91 213	92 928	95 431	96 804
Persons	149 209	159 316	168 082	171 425	173 695	176 690	179 623
External							
Males	24 814	26 511	28 081	30 393	32 765	36 933	38 255
Females	32 108	34 334	35 875	38 589	42 433	48 155	49 495
Persons	56 922	60 845	63 956	68 982	75 198	85 088	87 750
Total							
Males	249 676	260 553	267 986	271 979	278 820	289 872	300 172
Females	284 862	298 812	307 631	313 417	325 357	344 222	358 655
Persons	534 538	559 365	575 617	585 396	604 177	634 094	658 827

Source: Department of Employment, Education, Training and Youth Affairs, 'Selected Higher Education Student Statistics, 1997'.

## Vocational education and training (VET)

Most VET in Australia is provided in government-administered colleges, generally referred to as Colleges of Technical and Further Education (TAFE) or, to a lesser extent, Institutes of Technology. VET is also provided in some higher education institutions, schools and agricultural colleges, by adult and community education authorities and enterprises, and by private providers of education such as business colleges.

The TAFE institutions offer a wide range of non-vocational and vocational training programs, ranging from recreation and leisure, through basic employment and educational preparation to trades, para-professional and professional levels. Training programs are classified according to 12 fields of study on the basis of similar vocational (or non-vocational) emphasis or subject matter orientation, which are broadly consistent with the fields of study covered by higher education institutions.

Primary responsibility for administration of the TAFE system lies with the State and Territory Governments. In 1997, recurrent and operating funding of the TAFE system was about \$3,800m (the States and Territories provided 56%, the Commonwealth 25%, and 19% came from fees and other sources). Capital funding was \$321m, of which the Commonwealth provided 59% and the States 41%.

All States and Territories charge most students some form of administration fee for TAFE courses, varying according to the type of course and its duration. Nationally, in 1997 around 4% of recurrent and operating revenue for TAFE was provided by student fees and charges. Another 10% was received from full fee paying overseas clients, from employers and from individuals (excluding individual student fees).

The Commonwealth Government and the State Governments established a national vocational education and training system in 1992. Under this system, a Ministerial Council, chaired by the Commonwealth Minister, determines national policy and priorities, strategic directions, funding arrangements and planning processes for vocational education and training, on the advice of the Australian National Training Authority.

Under the national system, State training agencies manage the delivery of vocational education and training in a manner consistent

with the national strategic plan. These agencies are accountable to their State Ministers for operational matters, and to the Ministerial Council on matters of national policy.

Table 10.10 shows the number of VET teachers working in TAFEs and at other training providers. Of all VET teachers, 56% are employed full time and of these full-time staff, 66% are male. In contrast, almost three-quarters (74%) of part-time VET teachers are female.

Table 10.11 shows participation in vocational education and training programs (other than those which are higher education or school programs). Streams 2100–4500 are those courses that lead to a vocational award.

**10.10 VOCATIONAL EDUCATION TEACHING STAFF—1997–98(a)**

	Full-time staff	Part-time staff	All teaching staff
	'000	'000	'000
Males	12.1	3.9	<b>16.0</b>
Females	6.3	10.6	<b>16.8</b>
Persons	18.4	14.4	<b>32.9</b>

(a) Average over the financial year.

Source: Unpublished data, Labour Force Survey.

**10.11 VOCATIONAL EDUCATION AND TRAINING CLIENTS, Streams 2100–4500(a)—1997**

	Males	Females	Persons
Age group	'000	'000	'000
Under 16	11.5	9.8	21.4
16	24.2	18.5	42.9
17	31.6	22.5	54.4
18	43.8	32.6	76.8
19	41.6	28.8	70.6
20–24	133.5	101.7	235.9
25–29	90.3	79.4	170.0
30–39	149.1	146.7	296.3
40–49	99.5	118.8	218.7
50–59	45.4	49.2	94.9
60–64	8.0	8.3	16.4
64 and over	8.1	9.2	17.4
Not stated	47.0	51.0	142.8
<b>Total</b>	<b>733.8</b>	<b>676.7</b>	<b>(b)1 458.6</b>

(a) Courses leading to a vocational award. (b) Total persons exceeds the sum of the sexes because sex was not stated for 48,100 students.

Source: National Centre for Vocational Education Research, 'Australian Vocational Education and Training Statistics, 1997: In Detail'.

A client is any individual participating in a specific enrolment or training contract with a specific organisation. The table shows the number of VET clients, the majority of whom were enrolled in TAFE institutions, by age group and sex, in 1997.

Clients may be enrolled in more than one activity. Table 10.12 shows the number of course enrolments in each field of study in 1997, by stream.

**10.12 VOCATIONAL EDUCATION AND TRAINING COURSE ENROLMENTS,  
Stream and Field of Study—1997**

Stream	Land and marine resources, animal husbandry	Architecture, building	Art, humanities and social sciences	Business admin- istration, economics	Education	Engineering, surveying
	'000	'000	'000	'000	'000	'000
Basic employment skills	23.8	2.0	45.4	12.1	4.2	21.4
Education preparation	0.1	0.1	16.7	2.8	0.3	0.7
Operatives—initial	18.2	14.1	16.2	69.6	6.7	26.8
Recognised trades						
Part exempt	0.4	8.8	1.7	0.2	—	22.2
Complete	6.8	30.2	0.3	0.1	—	62.9
Other skills						
Part exempt	10.1	2.2	7.3	39.7	4.2	14.3
Complete	19.4	2.4	12.3	84.8	10.3	28.8
Trade technician/supervisory	5.7	11.9	8.8	48.9	9.2	28.1
Para-professional						
Technician	—	2.3	3.2	16.4	0.2	2.2
Higher technician	3.9	7.3	18.9	52.9	0.2	23.1
Professional	—	0.5	2.8	24.8	0.1	0.9
Operatives—post initial	1.5	2.8	1.2	7.2	0.6	5.3
Trades/other skills—post initial	9.9	7.5	1.7	9.2	2.0	16.4
Trade technician/supervisory—post initial	1.5	0.2	0.2	1.2	0.4	2.7
Para-professional						
Technician—post initial	—	—	—	1.4	2.9	0.5
Higher technician—post initial	—	0.1	0.1	1.0	2.5	1.0
<b>Total (excluding recreation,   leisure)</b>	<b>101.2</b>	<b>92.2</b>	<b>136.9</b>	<b>372.4</b>	<b>43.9</b>	<b>257.4</b>

...continued

### 10.12 VOCATIONAL EDUCATION AND TRAINING COURSE ENROLMENTS, Stream and Field of Study—1997—continued

Stream	Health, community services	Law, legal studies	Science	Veterinary science, animal care	Services, hospitality, transport -ation	TAFE multi-field education	Total
	'000	'000	'000	'000	'000	'000	'000
Basic employment skills	9.1	0.1	16.4	0.1	3.4	191.7	329.7
Education preparation	3.8	0.1	2.2	—	1.9	99.3	127.9
Operatives — initial	44.5	0.2	61.6	1.1	45.9	35.9	340.9
Recognised trades							
Part exempt	0.1	—	—	—	6.4	0.8	40.5
Complete	0.3	—	—	—	23.6	—	124.2
Other skills							
Part exempt	20.4	0.8	4.1	0.1	21.6	1.5	126.1
Complete	19.0	3.4	15.7	0.6	39.0	1.2	237.1
Trade technician/supervisory	16.4	0.1	5.1	0.4	11.9	2.5	149.0
Para-professional							
Technician	5.7	2.2	1.1	0.1	1.0	—	34.4
Higher technician	20.5	3.5	11.6	0.3	11.2	0.3	153.5
Professional	2.0	0.2	0.3	—	0.8	—	32.3
Operatives—post initial	3.6	0.1	11.9	—	3.4	10.1	47.7
Trades/other skills—post initial	8.1	0.1	3.3	—	17.3	3.4	78.9
Trade technician/supervisory—post initial	0.6	—	0.2	—	0.7	—	7.7
Para-professional							
Technician—post initial	0.5	—	0.5	—	—	0.4	6.3
Higher technician—post initial	0.2	—	2.5	—	0.1	0.3	7.8
<b>Total (excluding recreation,   leisure)</b>	<b>154.7</b>	<b>10.7</b>	<b>136.5</b>	<b>2.7</b>	<b>188.3</b>	<b>347.5</b>	<b>1 844.2</b>

Source: National Centre for Vocational Education Research, 'Australian Vocational Education and Training Statistics, 1997: In Detail'.

## Education characteristics of the population

### Participation in education

A large proportion of persons in the age group 15–24 participate in education well beyond the compulsory school age of 15 years (16 years in Tasmania). Table 10.13 shows that, in September 1997, 69% of 17 year olds were still at

school, the same as in 1996, while a further 13% had moved on to tertiary education (up from 12% a year earlier). Of all 17 year olds, 82% were attending an educational institution, compared with 81% in 1996. By 19 years of age, most young adults had left school (less than 3% remained), and over half (53%) were undertaking tertiary education.

### 10.13 EDUCATION PARTICIPATION RATES, Persons Aged 15–24—September 1997

Type of attendance	Age (years)										All 15–24
	15	16	17	18	19	20	21	22	23	24	
	%	%	%	%	%	%	%	%	%	%	%
Attending											
School	94.7	82.5	69.3	22.7	2.5	*1.1	*0.2	*0.4	*0.2	*0.0	<b>26.7</b>
Tertiary											
Full-time	*0.7	2.6	7.7	30.8	40.2	33.9	27.1	16.5	12.0	8.9	<b>17.9</b>
Part-time	*1.0	2.9	5.0	9.4	12.4	10.5	10.1	11.8	11.0	9.2	<b>8.4</b>
Total tertiary	1.7	5.6	12.7	40.2	52.6	44.4	37.2	28.3	23.0	18.1	<b>26.3</b>
Total attending	96.3	88.0	82.0	62.9	55.1	45.5	37.4	28.7	23.2	18.1	<b>53.0</b>
Not attending	3.7	12.0	18.0	37.1	44.9	54.5	62.6	71.3	76.8	81.9	<b>47.0</b>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>

Source: Participation in Education, Australia (6272.0).

**10.14 PERSONS AGED 15–64 WHO ATTENDED AN EDUCATIONAL INSTITUTION(a) IN 1996,  
Labour Force Status—May 1997**

Type of attendance	Employed			Unem- ployed	Labour force			Unem- ployment rate %
	Full-time	Part-time	Total		In	Not in	Total	
	'000	'000	'000	'000	'000	'000	'000	
<b>ATTENDED FULL-TIME IN 1996</b>								
Attending in 1997								
Full-time	17.4	405.5	423.0	76.7	499.7	640.3	1 140.0	15.4
Part-time	33.7	16.2	49.9	6.7	56.6	*5.2	61.8	11.9
Total	51.1	421.7	472.9	83.4	556.3	645.5	1 201.8	15.0
Not attending in 1997	136.9	78.6	215.4	67.4	282.9	37.7	320.5	23.8
<b>Total</b>	<b>188.0</b>	<b>500.3</b>	<b>688.3</b>	<b>150.9</b>	<b>839.2</b>	<b>683.1</b>	<b>1 522.3</b>	<b>18.0</b>
<b>ATTENDED PART-TIME IN 1996</b>								
Attending in 1997								
Full-time	*3.6	7.0	10.6	*2.1	12.7	12.1	24.8	*16.4
Part-time	305.8	55.6	361.4	12.5	373.9	20.7	394.6	3.3
Total	309.4	62.6	372.0	14.6	386.6	32.8	419.4	3.8
Not attending in 1997	268.6	57.8	326.4	27.0	353.3	31.3	384.7	7.6
<b>Total</b>	<b>578.0</b>	<b>120.4</b>	<b>698.4</b>	<b>41.6</b>	<b>740.0</b>	<b>64.1</b>	<b>804.0</b>	<b>5.6</b>
<b>TOTAL ATTENDED IN 1996</b>								
Attending in 1997								
Full-time	21.0	412.5	433.6	78.8	512.4	652.4	1 164.8	15.4
Part-time	339.5	71.8	411.3	19.2	430.5	25.9	456.4	4.5
Total	360.5	484.3	844.9	98.0	942.9	678.3	1 621.2	10.4
Not attending in 1997	405.5	136.4	541.8	94.4	636.2	69.0	705.2	14.8
<b>Total</b>	<b>766.0</b>	<b>620.7</b>	<b>1 386.7</b>	<b>192.4</b>	<b>1 579.1</b>	<b>747.3</b>	<b>2 326.4</b>	<b>12.2</b>

(a) To study for a recognised qualification.

Source: *Transition from Education to Work, Australia* (6227.0).

## Education attendance and the labour force

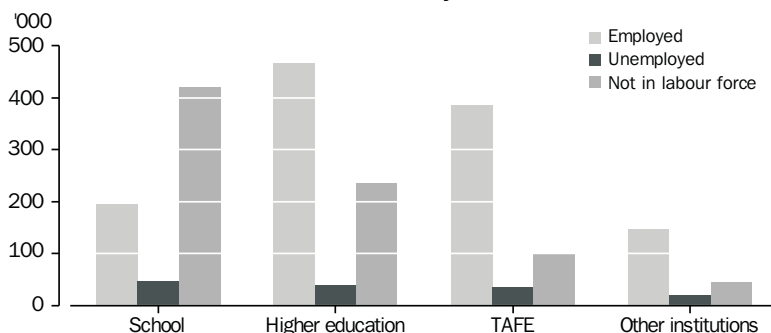
The ABS Transition from Education to Work Survey in May 1997 found that an estimated 2,326,400 persons aged 15–64 years had attended an educational institution in the previous year to study for a recognised qualification (see table 10.14). At the time of the survey, only 70% (1,621,200) were still attending. Included in this group were 61,800 persons who had changed from full-time to part-time study, and 33,700 of these were employed full time.

Of the 705,200 persons who had ceased education since the previous year, 77% were employed, 13% were unemployed and the remaining 10% were not in the labour force.

Many persons were involved in both study and work. The 1,621,200 persons continuing at an educational institution in May 1997 included 844,900 employed (360,500 of these in full-time employment) and 98,000 unemployed. There were 21,000 persons who reported combining full-time study and full-time employment.

Graph 10.15 indicates the labour force status of students aged 15 to 64 studying in May 1997 to gain a recognised educational qualification. The graph shows that although the majority of school students were not in the labour force (63%) almost one-third (30%) were employed. In contrast, only 21% of tertiary students were not in the labour force, and almost three-quarters (73%) were employed in May 1997.

**10.15 PERSONS AGED 15–64 ATTENDING AN EDUCATIONAL INSTITUTION—May 1997**



Source: Unpublished data, Transition from Education to Work survey.

### Educational attainment

In May 1997, 4,921,000 persons aged 15–64 (40% of this population) had completed a recognised post-school qualification. A further 6,605,000 (54% of this population) had no recognised post-school qualification, and the remaining 661,000 persons (5%) were still at school (see table 10.16).

Of those with post-school qualifications, 1,255,300 held a skilled vocational qualification (such as a trade qualification), the most commonly

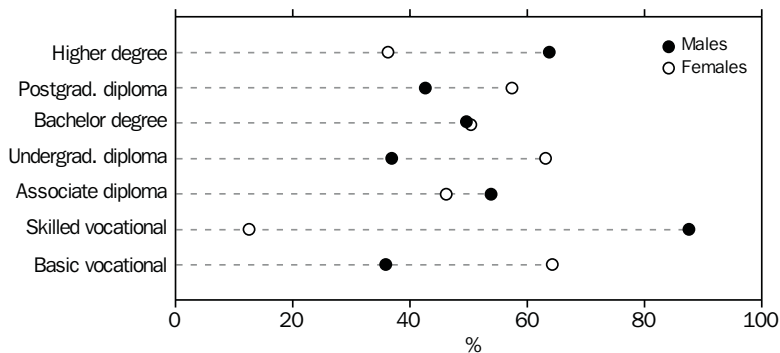
reported qualification. Bachelor degrees were reported by 1,220,200 persons, undergraduate diplomas by 561,500, and 377,500 reported associate diplomas. The smallest category comprised those with a higher degree, reported by 202,200 persons. There were more persons with a higher degree in the 35–44 years age group than in any other age group.

Graph 10.17 shows the distribution between males and females for each category of post-school qualifications in May 1997.

**10.16 PERSONS AGED 15–64, By Educational Attainment—May 1997**

Educational attainment	Age group (years)					Total
	15–24	25–34	35–44	45–54	55–64	
	'000	'000	'000	'000	'000	'000
<b>With post-school qualifications</b>						
Higher degree	*2.9	40.8	78.6	55.8	24.0	202.2
Postgraduate diploma	10.2	51.0	76.6	63.8	29.0	230.5
Bachelor degree	151.2	403.8	348.6	219.3	97.3	1 220.2
Undergraduate diploma	41.2	128.0	172.3	142.2	77.7	561.5
Associate diploma	66.0	105.7	88.4	81.4	36.0	377.5
Skilled vocational	126.2	360.1	339.7	257.5	171.8	1 255.3
Basic vocational	175.7	295.8	287.2	220.2	95.0	1 073.9
<i>Total</i>	573.3	1 385.2	1 391.4	1 040.2	530.8	4 921.0
<b>Without post-school qualifications</b>						
Completed highest level of school						
Attending tertiary in May 1997	499.5	69.4	31.3	13.2	*3.3	616.7
Not attending tertiary in May 1997	352.1	420.1	333.9	277.6	176.3	1 560.0
<i>Total</i>	851.6	489.5	365.2	290.8	179.7	2 176.7
Did not complete highest level of school						
Attending tertiary in May 1997	107.8	50.2	46.7	19.6	7.6	231.9
Not attending tertiary in May 1997	447.4	911.9	995.8	1 007.6	825.3	4 188.0
<i>Total</i>	555.2	962.1	1 042.5	1 027.2	833.0	4 419.9
<b>Total(a)</b>	1 407.7	1 451.9	1 410.0	1 319.9	1 015.6	6 605.0
Still at school	657.9	*0.3	*1.2	*0.7	*1.0	661.0
<b>Total</b>	<b>2 638.8</b>	<b>2 837.2</b>	<b>2 802.7</b>	<b>2 360.7</b>	<b>1 547.4</b>	<b>12 187.0</b>

(a) Includes persons who never attended school.

Source: *Transition from Education to Work, Australia* (6227.0).**10.17 QUALIFICATIONS BY SEX—May 1997**Source: *Unpublished data, Transition from Education to Work survey.*

## Australians' literacy skills: How do they rate internationally?

The 1997 edition of *Year Book Australia* presented new information about Australians' literacy skills. This article continues that theme, but this time the emphasis is on comparing aspects of Australians' literacy skills with those of people in selected other countries. Depending on the topic under consideration, information is presented for persons aged 15–65, or for those aged 25–65. These are age groups for which comparable data are readily available from the publication *Literacy Skills for the Knowledge Society*, published in 1997 by the Organisation for Economic Cooperation and Development (OECD) and Human Resources Development Canada. This source is gratefully acknowledged.

### The International Adult Literacy Survey

The Survey of Aspects of Literacy (SAL), conducted in Australia in 1996, was part of the International Adult Literacy Survey (IALS) which is being coordinated by the OECD and Statistics Canada. This project involves many countries undertaking similar surveys over a period of several years, and is yielding internationally comparable data.

The 'literacy and numeracy skills' covered in the IALS were 'the information processing skills necessary to use printed material found at work, at home, and in the community'. The survey focused on 'functional literacy and numeracy'—those skills necessary to understand and use information from printed material found in everyday life. The survey objectively assessed three types of literacy:

- *Prose literacy*: the ability to understand and use information from various kinds of prose texts, including texts from newspapers, magazines and brochures.

- *Document literacy*: the ability to locate and use information contained in materials such as tables, schedules, charts, graphs and maps.
- *Quantitative literacy*: the ability to perform arithmetic operations using numbers contained in printed texts or documents.

Consistent with international practice, these are also referred to as the prose, document and quantitative scales. For each of these three scales, literacy skill levels were assessed on a continuum ranging from Level 1 (very poor skills) through to Level 5 (very good skills). Because Level 5 is a comparatively small group, Levels 4 and 5 are combined in most instances.

### International comparisons: an overview

Table 10.18 compares the literacy skills of Australians aged 15–65 with those of people in six other countries, in terms of prose, document and quantitative literacy skills.

Unlike some other countries, such as Germany, Australia has basically the same distribution on each of the three scales. The overall pattern of Australians' literacy skills is similar to that of Canada and New Zealand, especially on the prose scale. Compared to some countries, the Australian distribution is less 'extreme'—for example, on the prose scale, 64% of people have skills at Level 2 and Level 3, whereas in the USA the equivalent figure is 58%. On the document and quantitative scales, the proportion of the German and Swedish population with very poor skills is about half that of Australia.

In the remainder of this article, some of the analysis is based on the proportion of people that have reached the third of the literacy levels—this is because Level 3 is often regarded as the minimum level of competence needed to cope with the demands of everyday life and work. Two aspects are examined—the relationship between literacy and labour force participation, and between literacy and community participation.



**10.18 LITERACY SKILLS OF AUSTRALIANS AGED 15–65 COMPARED WITH THOSE OF PEOPLE IN SIX OTHER COUNTRIES**

	Level 1	Level 2	Level 3	Level 4/5
	%	%	%	%
<b>PROSE SCALE</b>				
<b>Australia</b>	<b>17.0</b>	<b>27.1</b>	<b>36.9</b>	<b>18.9</b>
Canada	16.6	25.6	35.1	22.7
Germany	14.4	34.2	38.0	13.4
New Zealand	18.4	27.3	35.0	19.2
Sweden	7.5	20.3	39.7	32.4
United Kingdom	21.8	30.3	31.3	16.6
USA	20.7	25.9	32.4	21.1
<b>DOCUMENT SCALE</b>				
<b>Australia</b>	<b>17.0</b>	<b>27.8</b>	<b>37.7</b>	<b>17.4</b>
Canada	18.2	24.7	32.1	25.1
Germany	9.0	32.7	39.5	18.9
New Zealand	21.4	29.2	31.9	17.6
Sweden	6.2	18.9	39.4	35.5
United Kingdom	23.3	27.1	30.5	19.1
USA	23.7	25.9	31.4	19.0
<b>QUANTITATIVE SCALE</b>				
<b>Australia</b>	<b>16.8</b>	<b>26.5</b>	<b>37.7</b>	<b>19.1</b>
Canada	16.9	26.1	34.8	22.2
Germany	6.7	26.6	43.2	23.5
New Zealand	20.4	28.9	33.4	17.2
Sweden	6.6	18.6	39.0	35.8
United Kingdom	23.2	27.8	30.4	18.6
USA	21.0	25.3	31.3	22.5

Source: OECD and Human Resources Development Canada.

**Literacy and labour force participation**

The rate of participation in the labour force (i.e. being either employed or unemployed, rather than not participating at all) by persons aged 25–65 is clearly related to literacy levels, but there is considerable variation across countries and across literacy scales—from a high of 87% of those with high literacy skills (Level 3 or better) on the quantitative scale, in Sweden and the United Kingdom, to a low of 57% of those with low skills (Levels 1 and 2) on the document scale in Germany.

In Australia, about 65% of those with low literacy skills participate in the labour force (i.e. are employed or unemployed); for those with high skills the equivalent figure is about 85%. The participation rate of those with low literacy is about the same in Australia as it is in Canada and the United Kingdom; it is higher than in Germany (61% on the prose scale) but lower than in New Zealand, Sweden, and the United States (70%, 71%, and 74% respectively on the prose scale).

Of those aged 15–65 who are in the labour force, those with low literacy skills have a greater chance of being unemployed than do those who are highly skilled. In Australia, the unemployment rate for the former group (low skills) was 11.3%, more than double that of the latter—4.6%. This magnitude of difference is the same as in other countries, with the exception of New Zealand where those with low literacy skills had an unemployment rate of 15.2%, four times that of the population with high skills.

Among persons aged 25–65 who are employed, those with higher literacy skills generally earn more than those with lower skills, but again there are differences across countries, and across literacy scales. For example, in Australia, 58% of employed persons with good/very good prose skills (Level 4/5) are in the top 60% of earners. This compares with 26% of those with very poor skills (Level 1). By contrast, in Sweden the corresponding figures are 83% and 72%, and in New Zealand they are 73% and 34%.

**Literacy and community participation**

Participation in voluntary community activities outside of the formal labour market is an important consideration in many societies. Across all levels of literacy, in Australia 26% of people aged 25–65 participated in some voluntary community activity at least once a month. This figure is about the same as those for Canada and Germany, greater than in the United Kingdom (19%), but less than in Sweden (47%), the USA (34%) and New Zealand (33%).

Across all of the selected countries, there is a positive relationship between literacy and voluntary community work—participation is more frequently associated with higher skills

than it is with lower skills. For example, in Australia, 21% of those with low literacy skills on the prose scale participated compared to 29% of those with high skills. Of the six other countries, only two countries (Canada and the United Kingdom) had lower participation rates than did Australia among those with low literacy skills, and two (the United Kingdom, and Germany) had lower participation by those with high skills. However, the difference in the participation rates of the two groups was relatively large in Australia compared to most other countries—only in Canada was the difference greater (14% of the low skilled compared to 30% of those with high skills).

## Adult education

Adult and community education (ACE) is the most decentralised of the education sectors. ACE refers to the provision of those general adult education programs and activities which fall outside, but complement, the formal programs and qualification pathways provided by the school, TAFE and higher education sectors. ACE focuses on the provision of learning opportunities at a community level, rather than work-based training.

The range of course providers is widespread and includes commercial training providers, private industry, professional and semi-professional bodies, higher education institutions (including tertiary bodies), TAFE institutions and workers' educational associations.

Courses range from general interest, recreational and leisure activities, personal development, social awareness and craft through to vocational, remedial and basic education. Community-based adult education is open to all, and its non-formal characteristics demonstrate the capacity of the community to develop alternatives to institutionalised education.

The higher education sector plays an integral part in adult education through programs of continuing education in professional development, preparatory skills and general education. The TAFE and community education sectors are the largest providers of adult recreational and leisure courses.

## Government assistance to students

In 1997, the Commonwealth Government provided assistance to students through the AUSTUDY, ABSTUDY and Assistance for Isolated Children (AIC) schemes as shown in table 10.19. Neither the number of students nor the amount of assistance provided may be totalled, as some of those receiving the AUSTUDY/ABSTUDY supplement (those who did not fully trade in their grant) would be counted twice. More information on each of these schemes is provided below.

### 10.19 STUDENT ASSISTANCE SCHEMES—1997

Scheme	Students Assistance	
	no.	\$m
AUSTUDY	464 248	1 466
ABSTUDY	50 763	137
AIC	12 243	27
AUSTUDY/ABSTUDY Supplement	60 609	49

Source: Department of Education, Training and Youth Affairs.

## AUSTUDY

AUSTUDY was the Commonwealth Government's means-tested and non-competitive scheme of financial assistance for secondary and tertiary students aged 16 and over. The scheme, introduced in 1987, was a major element in the Government's drive to increase participation in full-time education in the upper secondary and tertiary levels.

The principal aim of AUSTUDY was to provide an equal opportunity for all Australians to access education. This was achieved through the provision of financial assistance to students who would not otherwise be able to continue their education because of financial circumstances.

AUSTUDY also had special provisions for young people unable to live with their parents because of exceptional circumstances. These provisions allowed young people to be classified as independent, thus free from the application of the parental means test in assessing their eligibility for AUSTUDY.

In 1997, 464,248 students were assisted under AUSTUDY.

AUSTUDY was replaced on 1 July 1998 by the Youth Allowance for young people up to the age of 24, and the AUSTUDY payment for students aged 25 years or more. While the Youth Allowance and AUSTUDY payment are administered by the Department of Family and Community Services and delivered by Centrelink, they remain broadly comparable with AUSTUDY in terms of the objectives and operational details described above.

## ABSTUDY

ABSTUDY represented a major component of the Government's commitment, under the National Aboriginal and Torres Strait Islander Education Policy, to encourage Australian Aboriginal and Torres Strait Islander peoples to take full advantage of educational opportunities, to promote equality of education, to be involved in decision-making, and to improve educational outcomes.

The scheme provided financial assistance for Australian Aboriginal and Torres Strait Islander peoples who undertook approved secondary or tertiary education courses. Assistance was also available to primary students aged 14 or over.

ABSTUDY paid an education supplement to certain Aboriginal and Torres Strait Islander school students. Other allowances included the living allowance, dependent spouse allowance, school fees allowance, a fares allowance in some circumstances, the pensioner education supplement and an incidental allowance. Full-time, correspondence and tertiary part-time students may have been eligible for assistance. Some ABSTUDY allowances were not income tested. Others were subject to income testing and abatement rules. In 1997, ABSTUDY assisted 50,763 students.

On 1 July 1998, ABSTUDY was replaced by the Youth Allowance and the AUSTUDY payment for older students and this new allowance is administered by the Department of Family and Community Services.

## AUSTUDY/ABSTUDY supplement

The AUSTUDY/ABSTUDY supplement gave eligible tertiary students the chance to trade in all or part of their grant in return for a supplement loan of double the amount traded in. The supplement was entirely optional and was provided at low interest. Repayments did not commence until five years after start of the loan, after which recovery was made through the taxation system when taxable income reached average weekly earnings.

An AUSTUDY/ABSTUDY grant was also available to dependent tertiary students in some circumstances. In 1997, 60,609 tertiary students were paid an AUSTUDY/ABSTUDY supplement loan, a decrease of 6.2% on the number of tertiary students paid the supplement in 1996.

AUSTUDY/ABSTUDY was replaced by the Youth Allowance and the AUSTUDY payment for older students on 1 July 1998. This new allowance is

administered by the Department of Family and Community Services and delivered by Centrelink. However, the student financial supplement is still available to eligible Youth Allowance and AUSTUDY students.

## Assistance for isolated children

The AIC Scheme helps the families of primary and secondary students, and tertiary students under 16 years old, who do not have reasonable daily access to an appropriate government school primarily because of geographic isolation. An 'appropriate school' is a government school which offers the student's level of study or, if the student has special health-related or educational needs, one which provides access to the facilities, programs and/or environment required for those needs.

With the exception of the additional component of Boarding Allowance, all AIC allowances are free of income and assets testing. Depending on parental income and family assets, students 16 years old and over may receive more assistance under AUSTUDY. In 1997, AIC assisted 12,243 students and scheme expenditure was \$27m.

## Expenditure on education

This section provides information on the extent and composition of both government and private expenditure on education. Estimates of government and private expenditure have been compiled in accordance with national accounting concepts. An explanation of these concepts is contained in *Australian National Accounts: Concepts, Sources and Methods* (5216.0); *Government Finance Statistics—Concepts, Sources and Methods* (5514.0); *Information Paper: Developments in Government Finance Statistics* (5516.0); and also in *Expenditure on Education, Australia* (5510.0) from which figures included in this section have been taken.

The emphasis given to the outlays of the public sector reflects not only the relative importance of that sector in the provision of educational services, but also the lack of detailed information relating to expenditure on educational activities in the private sector. However, the information provided shows the order of magnitude of private sector spending, and also the aggregate supply of education services and facilities.

Table 10.20 presents the total outlays on education by the government and private sectors and their components, and the percentages of Gross Domestic Product (GDP) which they represent, for 1996–97 and preceding years.

## 10.20 GOVERNMENT AND PRIVATE OUTLAYS ON EDUCATION

	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
VALUE (\$m)						
Government outlays on education						
Government final consumption expenditure	14 139	14 573	14 835	15 245	15 700	16 842
Gross fixed capital expenditure	1 387	1 703	1 674	1 745	1 847	1 962
Government final expenditure	15 526	16 276	16 509	16 990	17 547	18 804
Grants to non-profit institutions	2 224	2 311	2 480	2 707	2 867	3 141
Grants to persons	2 061	2 233	2 278	2 339	2 561	2 457
Other	77	110	29	69	-8	78
<i>Total government outlays on education</i>	<i>19 888</i>	<i>20 930</i>	<i>21 296</i>	<i>22 105</i>	<i>22 967</i>	<i>24 480</i>
Private outlays on education						
Private final consumption expenditure	5 052	5 416	5 876	6 354	6 884	7 456
Gross fixed capital expenditure	340	352	401	380	452	467
<i>Total private outlays on education</i>	<i>5 392</i>	<i>5 768</i>	<i>6 277</i>	<i>6 734</i>	<i>7 336</i>	<i>7 923</i>
Total outlays on education						
Total government outlays	19 888	20 930	21 296	22 105	22 967	24 480
Total private outlays	5 392	5 768	6 277	6 734	7 336	7 923
Less private outlays financed by government	2 224	2 311	2 480	2 707	2 867	3 141
<b>Total outlays on education</b>	<b>23 056</b>	<b>24 387</b>	<b>25 093</b>	<b>26 132</b>	<b>27 436</b>	<b>29 262</b>
Government advances						
Advances to persons and non-profit institutions	23	18	15	-2	6	5
Advances to persons for HECS purposes	564	576	576	381	540	513
<i>Total</i>	<i>587</i>	<i>594</i>	<i>591</i>	<i>379</i>	<i>546</i>	<i>518</i>
Gross Domestic Product(a)	393 455	413 406	435 184	457 987	491 897	512 434
PROPORTION OF GROSS DOMESTIC PRODUCT (%)						
Total government outlays on education	5.1	5.1	4.9	4.8	4.7	4.8
Total final expenditure on education, of which						
Government final consumption expenditure	3.6	3.5	3.4	3.3	3.2	3.3
Private final consumption expenditure	1.3	1.3	1.4	1.4	1.5	1.5
Government gross fixed capital expenditure	0.4	0.4	0.4	0.4	0.4	0.4
Private gross fixed capital expenditure	0.1	0.1	0.1	0.1	0.1	0.1
<i>Total</i>	<i>5.3</i>	<i>5.3</i>	<i>5.2</i>	<i>5.2</i>	<i>5.1</i>	<i>5.2</i>
<b>Total outlays on education</b>	<b>5.9</b>	<b>5.9</b>	<b>5.8</b>	<b>5.7</b>	<b>5.6</b>	<b>5.7</b>
Total government advances	0.1	0.1	0.1	0.1	0.1	0.1

(a) The figures for Gross Domestic Product (GDP(E)) are obtained from Australian National Accounts: National Income, Expenditure and Product, March Quarter 1998 (5206.0).

Source: *Expenditure on Education, Australia* (5510.0).

Total outlays on education rose 6.7% from \$27,436m to \$29,262m between 1995–96 and 1996–97, and increased as a proportion of GDP from 5.6% to 5.7%.

Total final expenditure on education, comprising government and private final consumption expenditure and gross fixed capital expenditure, rose 7.4% from \$24,883m in 1995–96 to \$26,727m in 1996–97. Between those years, government final expenditure rose 7.2%, compared with growth of private final expenditure of 8.0%.

Government final expenditure on education as a proportion of GDP fell each year from 4.0% in 1991–92 to 3.6% in 1995–96 but rose to 3.7% in 1996–97. Private final expenditure on education as a proportion of GDP has increased slightly from 1.4% in 1991–92 to 1.6% in 1996–97.

Total government outlays on education (which include payments to the private sector) rose 6.6% from \$22,967m to \$24,480m between 1995–96 and 1996–97, and rose as a proportion of GDP from 4.7% to 4.8%. This growth in outlays was due to a 2.9% increase in Commonwealth outlays plus a 6.9% rise in State, Territory and local outlays. Commonwealth grants to the States and Territories rose 6.0% during 1996–97. Outlays by State and local governments from their own resources rose 7.0% during 1996–97, compared to a 5.8% increase during 1995–96.

Table 10.21 shows the components of government outlays on education by economic transaction and government purpose in 1996–97.

## 10.21 GOVERNMENT OUTLAYS ON EDUCATION—1996–97

	General government final consumption expenditure	Personal benefit payments	Expenditure on new fixed assets	Expenditure on secondhand fixed assets	Other(a)(b)	Inter-sector transfers(c)	Own source outlays(b)(d)
	\$m	\$m	\$m	\$m (net)	\$m	\$m	\$m
PRIMARY AND SECONDARY EDUCATION							
Commonwealth(e)	17	614	—	—	17	3 362	4 010
State, Territory and local(e)	9 629	64	797	-47	2 825	-3 362	9 906
<b>Total</b>	<b>9 646</b>	<b>679</b>	<b>797</b>	<b>-47</b>	<b>2 842</b>	<b>—</b>	<b>13 916</b>
TERTIARY EDUCATION							
University education							
Commonwealth	54	886	—	—	6	3 780	4 726
State, Territory and local	19	3	—	—	—	196	218
Universities	3 404	34	938	-76	272	-3 979	593
<b>Total</b>	<b>3 476</b>	<b>924</b>	<b>938</b>	<b>-76</b>	<b>278</b>	<b>—</b>	<b>5 540</b>
Technical and further education							
Commonwealth	15	239	—	—	87	856	1 179
State, Territory and local	2 157	2	309	-4	56	-856	1 664
<b>Total</b>	<b>2 172</b>	<b>241</b>	<b>309</b>	<b>-4</b>	<b>143</b>	<b>—</b>	<b>2 861</b>
Tertiary education n.e.c.							
Commonwealth	—	82	—	—	—	—	82
State, Territory and local	21	—	1	—	—	—	22
<b>Total</b>	<b>21</b>	<b>82</b>	<b>1</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>104</b>
Total tertiary education							
Commonwealth	68	1 207	—	—	93	4 639	6 007
State, Territory and local	2 197	5	311	-4	56	-660	1 905
Universities	3 404	34	938	-76	272	-3 979	593
<b>Total</b>	<b>5 669</b>	<b>1 246</b>	<b>1 248</b>	<b>-80</b>	<b>421</b>	<b>—</b>	<b>8 505</b>
PRESCHOOL AND OTHER SPECIAL EDUCATION							
Commonwealth	76	9	—	—	—	85	170
State, Territory and local	1 060	-8	35	-6	174	-85	1 170
<b>Total</b>	<b>1 136</b>	<b>2</b>	<b>35</b>	<b>-6</b>	<b>174</b>	<b>—</b>	<b>1 340</b>
TRANSPORTATION OF STUDENTS							
Commonwealth	—	—	—	—	—	—	—
State, Territory and local	166	528	1	—	11	—	706
<b>Total</b>	<b>166</b>	<b>528</b>	<b>1</b>	<b>—</b>	<b>11</b>	<b>—</b>	<b>706</b>
EDUCATION N.E.C.							
Commonwealth	189	2	—	—	17	—	208
State, Territory and local	36	1	14	—	-2	—	49
<b>Total</b>	<b>225</b>	<b>3</b>	<b>14</b>	<b>—</b>	<b>15</b>	<b>—</b>	<b>257</b>
TOTAL GOVERNMENT OUTLAYS							
Commonwealth	350	1 833	—	—	128	8 086	10 397
State, Territory and local	13 087	590	1 158	-57	3 067	-4 106	13 739
Universities	3 404	34	938	-76	272	-3 980	592
<i>Less inter-sector transfers</i>	—	—	—	—	—	-248	-248
<b>Total</b>	<b>16 842</b>	<b>2 457</b>	<b>2 096</b>	<b>-134</b>	<b>3 467</b>	<b>-248</b>	<b>24 480</b>

(a) Mainly current grants to non-government schools, subsidies for teacher housing and advances to persons under the HECS scheme.

(b) Totals for Other and Own source outlays do not agree with the sum of Commonwealth, and State, and Territory and local Other and Own source outlays because of consolidation of transfers between these levels of government. (c) Specific purpose grants from the Commonwealth Government to State and Territory Governments. The amounts concerned are shown as a deduction from outlays in the rows for State, Territory and local governments. (d) Outlays on education less specific purpose grants received from other levels of government. In the case of the Commonwealth Government, this represents its total outlays, but in the case of State, Territory and local governments it represents outlays financed from their own resources and non-specific Commonwealth grants. (e) Commonwealth funding of non-government schools is made via inter-governmental grants which are passed on through State and Territory Governments.

Source: *Expenditure on Education, Australia (5510.0)*.

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## Introduction

This chapter provides an overview of the Australian criminal justice system. Where possible, data are based on national crime and justice statistics from surveys and administrative by-product collections, focusing on crimes recorded by police, criminal courts, correctional services and involvement of Indigenous people in the criminal justice system. The objective of national crime and justice statistics is to make available data which are comparable across the systems of criminal law in Australia, and so provide indicators of the level and nature of crime and the activities of criminal justice agencies.

## The criminal justice system

The criminal justice system consists of the State and Commonwealth institutions, agencies, departments and personnel responsible for dealing with the justice aspects of crime, victims of crime, persons accused or convicted of committing a crime, and related issues and processes.

In all States and Territories, two systems of criminal justice exist: the federal criminal justice system, based on offences against Commonwealth laws, and the relevant State system, based on offences against State laws. Criminal law is administered principally through the Commonwealth, State and Territorial police forces, the National Crime Authority, and State and Territorial corrective or penal services. There is no independent federal corrective service, and the relevant State or Territorial agencies provide corrective services for federal offenders.

The States and Territories have independent legislative powers in relation to all matters that are not otherwise specifically vested in the Commonwealth of Australia, and it is the statute law and the common law of the States and Territories that primarily govern the day-to-day lives of most Australians.

The States and Territories have powers to enact their own criminal law, while the Commonwealth has powers to enact laws, including sanctions for criminal offences, in

relation to its responsibilities under the Constitution. Thus, in effect, there are nine different systems of criminal law in existence in Australia.

The various agencies that comprise the criminal justice system can be seen as acting within a broader process in which criminal incidents and offenders move through a number of stages. Figure 11.1 indicates these broad stages and the points at which the different justice agencies make their contribution.

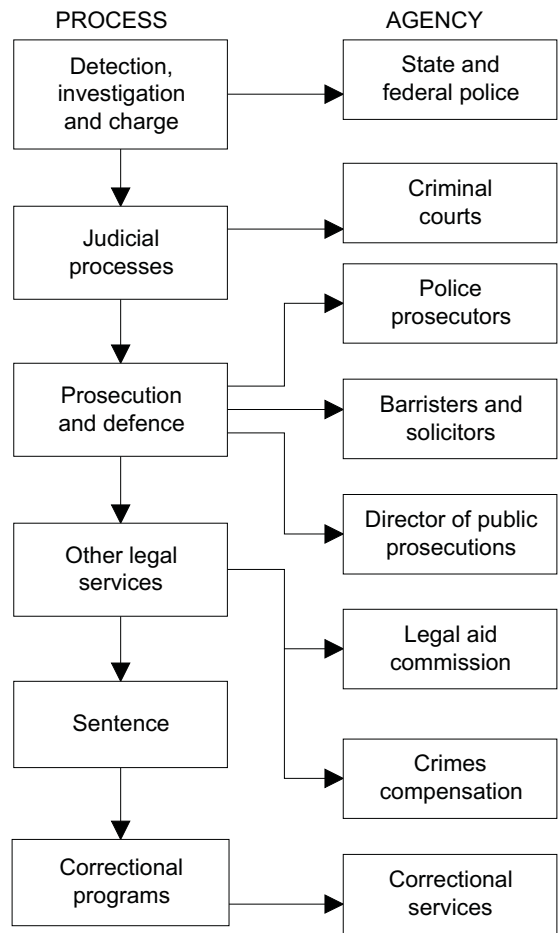
Police agencies are responsible for the prevention, detection and investigation of crimes. Where an alleged offender is detected by police, charges may then be laid before a criminal court. The court, consisting of a judicial officer, a jury (in the higher courts), the prosecution and the defence, is then responsible for determining the guilt or innocence of the defendant.

In addition to the court itself, there are a number of other agencies involved in the court process. These include legal representatives for the prosecution and defence. Police Prosecutors are generally responsible for less serious matters heard before courts of summary jurisdiction, while Crown Prosecutors normally handle prosecution of the more serious matters dealt with at the Supreme or Intermediate court levels. For defendants, legal aid may be available to handle their defence.

Following the hearing of the charges, in cases where a finding of guilt is made by the court, a sentence may be imposed. Fines and bonds are the most common penalties handed down by the courts. The more serious sentences are administered by correctional services agencies. These may include imprisonment, community work of various kinds and some types of bonds. A number of jurisdictions have also introduced new penalties such as home detention or work camps which are also administered by correctional agencies.

For victims of crime, compensation may be available through the courts, and this is normally handled through a special tribunal. The State provides compensation to victims who can demonstrate an injury or suffering as a result of a criminal incident. The State will then seek these funds from the offender, if they have been identified and convicted.

11.1 THE CRIMINAL JUSTICE SYSTEM



Source: National Centre for Crime and Justice Statistics, ABS.

Expenditure on public order and safety

The government sector of public order and safety covers outlays on administration, supervision, support, operation and review of public order and safety affairs and services. Public order and safety include police and fire protection services, law courts and legal services, prisons and corrective services, and other services related to public order and safety.

In 1996–97, \$7.41b (equivalent to \$402 per person) was spent by the Commonwealth Government and the State, Territory and local governments on public order and safety

(see table 11.2). Compared to 1995–96, this represents an increase of 10.6% in total outlays, or \$34 more per person.

11.2 GOVERNMENT EXPENDITURE ON PUBLIC ORDER AND SAFETY

	1994–95	1995–96	1996–97
Expenditure category	\$m	\$m	\$m
Current outlays	5 681	6 162	6 872
Capital outlays	502	534	534
<b>Total outlays</b>	<b>6 183</b>	<b>6 696</b>	<b>7 406</b>

Source: Government Finance Statistics, Australia, 1996–97 (5512.0).

## The police

Australia is served by eight police forces: one in each State and the Northern Territory, and the Australian Federal Police who are also responsible for policing the Australian Capital Territory. The National Crime Authority also has a policing role.

The principal duties of the police are the prevention and detection of crime, the protection of life and property, and the enforcement of law to maintain peace and good order. They may perform a variety of additional duties in the service of the State, including the prosecution of summary offences, regulation of street traffic, and acting as clerks of petty sessions, Crown land bailiffs, mining wardens and inspectors under the Fisheries and other relevant Acts.

With the exception of the Australian Federal Police and the National Crime Authority, police forces in Australia are under the control of the State Governments and Northern Territory Government, but their members perform certain functions on behalf of the Commonwealth Government, such as the registration of aliens, and in conjunction with the Australian Federal Police and other Commonwealth officers they enforce various Commonwealth Acts and Regulations.

## Commonwealth policing agencies

### Australian Federal Police (AFP)

The AFP is a Commonwealth statutory authority brought into existence by the *Australian Federal Police Act 1979*. The AFP has its headquarters in Canberra. Its Criminal Investigations Program is conducted through six Regional Commands, its Headquarters Investigations Department and its numerous Liaison Officers in many overseas countries.

The AFP is responsible for the prevention, detection and investigation of criminal offences such as drug offences, money laundering and organised crime, identifying the proceeds of crime, and investigation of fraud against Commonwealth revenue and expenditure such as social security fraud and taxation fraud. In the Australian Capital Territory, the AFP provides a full range of general community policing services, including traffic control, special operations, search and rescue services and conventional crime investigations.

### National Crime Authority (NCA)

The NCA was established by the Commonwealth Government in July 1984 through the *National Crime Authority Act 1984*. Similar legislation was passed in each State, the Northern Territory and subsequently the Australian Capital Territory, to underpin the work of the NCA in those jurisdictions, making the NCA the only law enforcement agency in Australia whose investigations are not limited by jurisdictional or territorial boundaries.

The decision to establish the NCA was taken in response to the findings of several Royal Commissions conducted in the late 1970s and early 1980s, which revealed the extent of organised criminal activity in Australia. The NCA's mission is to counteract organised criminal activity and reduce its impact on the Australian community, working in cooperation and partnership with other agencies.

## Size of police forces

The number of sworn police officers in the various Australian police forces is shown in table 11.3. The figures have been supplied by the various police agencies, and are not directly comparable (for example, the figures do not differentiate between full-time and part-time officers). In some police forces, unsworn (civilian) staff carry out duties directly connected with policing.

Further detail on the operations of each force may be found in the police forces' annual reports to their Ministers.

**11.3 SIZE OF POLICE FORCES**

	At 1 July 1997	At 1 July 1998
Police force	no.	no.
NCA	105	114
AFP	2 027	1 931
— of which ACT	606	612
NSW	13 207	13 414
Vic.	10 130	9 858
Qld	6 561	6 566
SA	3 447	3 630
WA	4 784	4 815
Tas.	1 052	1 096
NT	779	883
<b>Total</b>	<b>(a)42 092</b>	<b>(a)42 307</b>

(a) Includes the NCA and the AFP. The ACT component of the AFP is included in the AFP total.

Source: Police annual reports.

## National crime statistics

The aim of national crime statistics is to provide comparable data across the States and Territories. These statistics are indicators of the level and nature of reported crime in Australia and provide a basis for measuring changes over time.

Two sources of national statistics provide a picture of crime in Australia: crimes recorded by police, and crime victimisation surveys. Crimes recorded by police relate to offences that have become known to and have been recorded by police. These offences may have been reported by a victim, witness or other person, or they may have been detected by police. These statistics do not provide a total picture of crime, as not all crimes come to the attention of police. In addition, care should be taken in interpreting police statistics, as fluctuations in recorded crime may be a reflection of changes in community attitudes to recording crime, changes in police procedures or changes in crime recording systems, rather than a change in the incidence of criminal behaviour.

To gain a more comprehensive picture of the nature and extent of crime, police statistics are complemented by information from other sources such as crime victimisation surveys. These surveys are conducted on a household basis. Not all types of crime are suitable for measurement by household surveys. No reliable information can be obtained about crimes without specific victims, such as trafficking in narcotics. Crimes of which the victim may not be aware cannot be measured effectively; some instances of fraud and attempted crimes of many types may fall into this category. It may also be difficult to obtain information about some crimes, such as sexual offences and assault by other household members, so that some of these crimes are not fully reflected in the data collected. Finally, no reliable data can be collected by household surveys on crimes against commercial establishments.

In essence, crime victimisation surveys are more suitable for measuring crimes against individuals or households with specific victims who are aware of and recall what happened to them and how it happened, and who are willing to relate what they know.

## Crime victimisation surveys

A national household survey on crime and safety was conducted in April 1998. The survey provides data on selected household and personal crimes of persons aged 15 years and over and the risk factors associated with crime victimisation. The crimes covered by this survey are break-ins and attempted break-ins to private dwellings, motor vehicle theft, theft or attempted theft where the person was attacked or threatened with violence ('robbery') and use of force or violence, or attempts or threats of force or violence ('assault'). Sexual assault for females aged 18 years and over is also included. The survey results will be released in June 1999.

Similar surveys were conducted in 1993 Australia-wide, in 1995 in all States and Territories except Tasmania and the Northern Territory, and have been conducted annually in New South Wales since 1990.

## Crimes recorded by police

In 1997, the number of victims recorded by police rose from the previous year for all the offence categories except attempted murder, manslaughter and sexual assault (table 11.4). Nationally, offences against property (unlawful entry with intent, motor vehicle theft and other theft) were far more common than offences against the person (murder, attempted murder, manslaughter, assault, sexual assault and kidnapping/abduction).

## Personal crime

Assault is the most common category of offences recorded against the person. Table 11.4 shows that police recorded 123,940 victims of assault nationally during 1997, representing a victimisation rate of 669 victims per 100,000 persons. There were 14,138 cases of sexual assault recorded, a rate of 76 victims per 100,000 persons, and 322 cases of murder, a rate of 1.7 victims per 100,000 persons. Males had higher recorded assault rates than females across all age groups and were more likely to be victims of murder, whereas females were more likely to be victims of sexual assault and kidnapping/abduction.

Nationally, victimisation rates were generally highest for the 15–19 year age group (table 11.5). This age group had the highest victimisation rates for manslaughter, sexual assault, armed robbery and unarmed robbery. Victims aged 20–24 years had the highest victimisation rates for assault and attempted murder.

### Property crime

In 1997, there were 417,845 offences nationally recorded by police as relating to unlawful entry into premises with intent. Of these offences, 328,869 (79%) involved either actual or intended

taking of property. A further 88,976 offences (21%) were recorded where the unlawful entry was made with the intention to commit some other form of criminal act, such as assault or property damage.

A total of 130,406 motor vehicles were recorded stolen in Australia during 1997, representing an increase of 6.1% compared with 1996. Other theft includes all recorded theft offences except theft of motor vehicles, and is the largest category of all property offences. A total of 529,345 other theft offences were recorded in 1997, an increase of 1.5% compared with 1996.

#### 11.4 OFFENCES RECORDED BY POLICE, Number and Rate

Offence category	1995	1996	1997
NUMBER			
Homicide			
Murder	325	312	322
Attempted murder	299	335	318
Manslaughter	31	38	38
Driving causing death(a)	318	342	n.a.
Assault	101 267	114 156	123 940
Sexual assault	12 962	14 542	14 138
Kidnapping/abduction	467	480	557
Robbery			
Armed robbery	5 255	6 256	9 015
Unarmed robbery	9 303	10 116	12 246
Blackmail/extortion	155	268	353
Unlawful entry with intent			
Involving the taking of property	303 058	313 902	328 869
Other	81 850	88 177	88 976
Total	384 908	402 079	417 845
Motor vehicle theft	126 939	122 914	130 406
Other theft	490 084	521 762	529 345
RATE PER 100,000 POPULATION			
Homicide			
Murder	1.80	1.70	1.74
Attempted murder	1.66	1.83	1.72
Manslaughter	0.17	0.21	0.21
Driving causing death(a)	1.76	1.87	n.a.
Assault	560.72	623.44	668.78
Sexual assault	71.77	79.42	76.29
Kidnapping/abduction	2.59	2.62	3.01
Robbery			
Armed robbery	29.10	34.17	48.64
Unarmed robbery	51.51	55.25	66.08
Blackmail/extortion	0.86	1.46	1.90
Unlawful entry with intent			
Involving the taking of property	1 678.03	1 714.31	1 774.58
Other	453.20	481.56	480.11
Total	2 131.24	2 195.87	2 254.69
Motor vehicle theft	702.86	671.27	703.67
Other theft	2 713.60	2 849.49	2 856.35

(a) Complete counts and rate details for the offence Driving causing death not available for 1997.

Source: *Recorded Crime, Australia, 1996 (4510.0)*; *Recorded Crime, Australia, 1997 (4510.0)*.

**11.5 VICTIMS OF CRIME RECORDED BY POLICE(a), By Age Group (Years) of Victim—1997**

Offence category	0-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	Total
<b>MALES</b>										
Murder	0.82	0.45	2.41	2.58	3.54	2.73	2.40	1.26	1.53	2.21
Attempted murder	0.67	0.15	2.71	5.45	4.79	2.38	1.66	0.88	0.31	2.50
Manslaughter	0.30	—	0.75	0.29	0.56	0.21	0.08	0.25	0.31	0.30
Assault	120.20	659.24	1 523.16	1 590.59	1 327.13	777.69	490.63	282.95	105.24	771.12
Sexual assault	63.99	86.16	57.53	29.68	20.98	8.97	2.57	0.63	0.41	28.13
Kidnapping/abduction	3.81	5.51	5.12	3.73	1.67	0.42	0.25	0.25	—	2.05
Armed robbery(b)	0.60	16.52	89.31	72.25	45.92	34.70	32.55	29.90	11.93	35.59
Unarmed robbery(b)	2.77	86.31	247.74	141.78	84.41	56.08	41.74	36.71	19.27	69.82
Blackmail/extortion(b)	0.30	0.30	1.66	2.58	2.36	2.73	3.06	2.65	0.92	2.04
<b>FEMALES</b>										
Murder	0.24	0.47	1.74	1.48	1.53	1.67	1.53	1.02	0.95	1.26
Attempted murder	0.24	0.31	0.48	2.52	1.25	1.26	0.51	0.89	0.47	0.91
Manslaughter	0.16	—	—	0.44	0.14	0.14	—	—	0.08	0.11
Assault	76.61	396.09	1 153.30	1 221.35	965.48	580.24	305.59	125.09	48.95	522.73
Sexual assault	157.63	341.60	377.30	195.36	120.24	56.43	24.90	8.69	4.43	119.78
Kidnapping/abduction	4.57	12.49	12.05	8.59	2.15	1.39	0.34	0.13	0.24	3.74
Armed robbery(b)	0.87	3.75	26.17	33.47	23.60	21.27	19.72	13.67	5.22	16.83
Unarmed robbery(b)	1.26	18.74	70.42	68.72	54.43	48.27	57.87	50.47	49.75	46.68
Blackmail/extortion(b)	0.00	0.00	1.90	1.48	1.39	0.91	1.19	0.26	0.32	0.84
<b>PERSONS</b>										
Murder	0.54	0.46	2.09	2.04	2.53	2.20	1.97	1.14	1.20	1.74
Attempted murder	0.46	0.23	1.62	4.01	3.06	1.82	1.09	0.89	0.40	1.72
Manslaughter	0.23	—	0.39	0.36	0.35	0.17	0.04	0.13	0.18	0.21
Assault	99.55	531.58	1 348.34	1 416.70	1 150.68	680.96	400.47	205.55	74.03	668.78
Sexual assault	109.90	211.05	214.13	112.04	71.05	32.93	13.67	4.70	2.67	76.29
Kidnapping/abduction	4.18	8.91	8.50	6.12	1.91	0.91	0.29	0.19	0.13	3.01
Armed robbery(b)	0.73	10.29	58.71	53.76	34.97	28.11	26.30	21.96	8.24	27.34
Unarmed robbery(b)	2.03	53.33	161.91	106.80	69.80	52.30	49.79	43.61	36.61	59.77
Blackmail/extortion(b)	0.31	0.15	1.78	2.04	1.88	1.82	2.14	1.46	0.58	1.47

(a) Rate per 100,000 population. (b) For Robbery and Blackmail/Extortion where the victim can be an organisation, figures shown only include person victims.

Source: National Crime Statistics, 1995 (4510.0); Recorded Crime, Australia, 1996 (4510.0).



## Firearms

As table 11.6 and graph 11.7 show, a weapon was used in 75% of recorded murders in 1997, a slight decrease over 1996. Firearms were used in 23% of murders and 28% of attempted murders in 1997, decreases of 8% and 2% respectively

over 1996. While the use of firearms decreased or remained steady for most offences in 1997, the use of other weapons in the commission of offences increased for murder (8%), attempted murder (11%), and manslaughter (24%). The use of firearms in assaults and sexual assaults remained low (less than 1%).

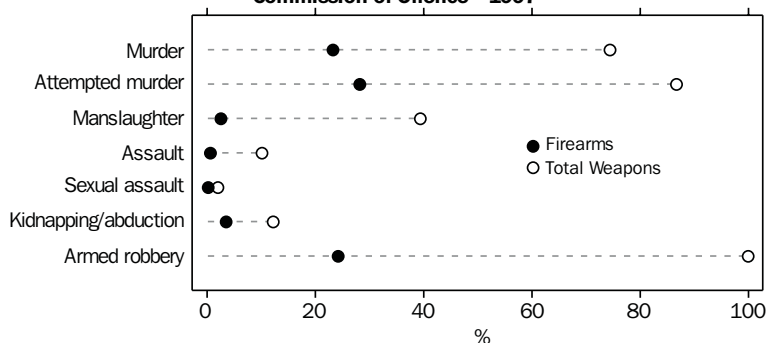
**11.6 VICTIMS OF REPORTED CRIME(a), By Use of Weapon in Commission of Offence**

Offence category	Firearm %	Other weapon %	Weapon n.f.d.(b) %	Total weapons %	No weapons %	Total %
<b>1997</b>						
Homicide						
Murder	23.3	48.8	2.5	74.5	25.5	100.0
Attempted murder	28.3	58.5	—	86.8	13.2	100.0
Manslaughter	2.6	36.8	—	39.5	60.5	100.0
Assault	0.7	9.1	0.4	10.2	89.8	100.0
Sexual assault	0.2	1.8	0.1	2.1	97.9	100.0
Kidnapping/abduction	3.6	8.4	0.2	12.2	87.8	100.0
Armed robbery	24.2	66.4	9.4	100.0	—	100.0
<b>1996</b>						
Homicide						
Murder	31.7	41.3	4.8	77.9	22.1	100.0
Attempted murder	31.0	47.2	3.3	81.5	18.5	100.0
Manslaughter	5.3	13.2	7.9	26.3	73.7	100.0
Assault	0.6	9.1	0.5	10.2	89.8	100.0
Sexual assault	0.1	1.7	0.1	1.9	98.1	100.0
Kidnapping/abduction	5.2	9.0	0.4	14.6	85.4	100.0
Armed robbery	25.3	64.4	10.3	100.0	—	100.0

(a) Victims of armed robbery refers to individual persons or organisations. All other offence categories used in this table refer to individual persons. (b) Not further defined.

Source: *Recorded Crime, Australia, 1996 (4510.0)*; *Recorded Crime, Australia, 1997 (4510.0)*.

**11.7 RATE OF CRIMES RECORDED BY POLICE, By Use of Weapon in Commission of Offence—1997**



Source: *Recorded Crime, Australia, 1997 (4510.0)*.

**11.8 TOTAL OFFENDERS, By Drug type—1996–97**

Drug type	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
NUMBER									
Cannabis	14 146	9 121	14 839	16 082	12 704	1 079	680	485	<b>69 136</b>
Cocaine	395	29	15	8	12	—	1	—	<b>460</b>
Heroin	2 458	3 396	419	271	472	28	29	67	<b>7 140</b>
Amphetamine	1 265	639	1 147	310	488	20	22	16	<b>3 907</b>
Hallucinogens	197	—	147	82	163	4	14	2	<b>609</b>
Steroids	44	—	8	—	14	2	3	—	<b>71</b>
Other drugs	699	756	1 652	338	235	38	2	3	<b>3 723</b>
Total	19 204	13 941	18 227	17 091	14 088	1 171	751	573	<b>85 046</b>
PROPORTION (%)									
Cannabis	73.7	65.4	81.4	94.1	90.2	92.1	90.5	84.6	<b>81.3</b>
Cocaine	2.1	0.2	0.1	0.0	0.1	0.0	0.1	0.0	<b>0.5</b>
Heroin	12.8	24.4	2.3	1.6	3.4	2.4	3.9	11.7	<b>8.4</b>
Amphetamine	6.6	4.6	6.3	1.8	3.5	1.7	2.9	2.8	<b>4.6</b>
Hallucinogens	1.0	0.0	0.8	0.5	1.2	0.3	1.9	0.3	<b>0.7</b>
Steroids	0.2	0.0	0.0	0.0	0.1	0.2	0.4	0.0	<b>0.1</b>
Other drugs	3.6	5.4	9.1	2.0	1.7	3.2	0.3	0.5	<b>4.4</b>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>

Source: Australian Bureau of Criminal Intelligence, *Australian Illicit Drug Report*, 1996–97.

## Drug offences

To combat the threat posed by the traffic in and abuse of drugs of dependence, there is close cooperation between the Commonwealth Government, the State and Territory Governments, the various police forces and other law enforcement agencies. In addition to other law enforcement agencies, the Australian Customs Service has responsibility for the enforcement of laws controlling the illicit importing and exporting of drugs.

A total of 85,046 offenders were processed for drug related offences in Australia during the period 1 July 1996 to 30 June 1997, 8.6% fewer than in the previous period. Table 11.8 shows that by far the largest category of drug offences was for those involving cannabis, with 69,136 offenders (81.3% of the national total). This figure represents a fall of 8.8% from this category in the previous year and is largely responsible for the overall decline in the total number of offenders proceeded against.

Information on the widespread problems arising from drug abuse in Australia, and on how these problems are being approached, is in the *Australian Illicit Drug Report* produced by the Australian Bureau of Criminal Intelligence.

## Outcome of police investigations

Statistics about the outcome of investigations describe the status of the processes of police investigation that are initiated following the

reporting or detection of an offence. The status of investigations includes:

- investigations that were not finalised (i.e. were still continuing, were pending or suspended);
- investigations that were finalised without an offender being proceeded against because the reported offence was not verified, the complaint was withdrawn, or the alleged offender could not be proceeded against because of some statutory or procedural bar; and
- investigations that were finalised and an offender was proceeded against by initiating court action or some other form of formal proceeding (e.g. a diversionary conference or a caution).

A higher proportion of offences against the person (homicide, assault, sexual assault, kidnapping and abduction, and blackmail and extortion offences) reached a finalised investigative status within 90 days than was the case for offences against property (unlawful entry with intent, theft and motor vehicle theft offences). Similarly, the proportion of offenders proceeded against was higher for offences against the person than for property offences. In the majority of investigations where a finalised outcome was reached, this occurred within 30 days.

Table 11.9 presents national statistics on the outcome of investigations into selected offences recorded by police in 1997.

**11.9 VICTIMS OF RECORDED CRIME, Outcome of Investigations—1997(a)**

	Murder	Attempted murder	Assault	Sexual assault	Robbery(b)	UEWI(c) total(d)	Motor vehicle theft
Investigation status	%	%	%	%	%	%	%
30 day status							
Investigation not finalised	27.0	23.6	45.5	59.2	82.1	93.0	91.3
Investigation finalised							
No offender proceeded against	8.4	1.9	14.2	13.9	3.0	1.0	2.0
Offender proceeded against	64.6	74.5	40.1	26.7	14.9	5.9	6.7
Not available	—	—	0.2	0.1	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
90 day status							
Investigation not finalised	22.0	14.8	39.8	50.4	79.0	91.4	89.9
Investigation finalised							
No offender proceeded against	9.3	2.8	16.1	16.8	3.4	1.2	2.2
Offender proceeded against	68.6	82.4	43.9	32.8	17.6	7.3	7.8
Not available	—	—	0.2	0.1	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	no.	no.	no.	no.	no.	no.	no.
<b>Total</b>	<b>322</b>	<b>318</b>	<b>123 940</b>	<b>14 138</b>	<b>21 261</b>	<b>417 845</b>	<b>130 406</b>

(a) For selected offences recorded by police during 1 January to 31 December 1997. (b) Robbery includes both Armed and Unarmed robbery. (c) Unlawful entry with intent. (d) UEWI Total includes both UEWI-involving the taking of property and UEWI-other.

Source: *Recorded Crime, Australia, 1997 (4510.0)*.

## Courts

Courts exist in all Australian States and Territories for the hearing of both criminal and civil cases. A criminal case arises from a charge laid by police or other prosecuting authorities, and is an allegation of a breach of the criminal law. A civil case, by contrast, is a dispute between two or more individuals or corporations, in which one side is seeking a legal remedy for an injury or loss from the other party who is alleged to be liable.

The courts are arranged in a hierarchy, with the bulk of less serious matters being heard before magistrates and more serious matters being heard before judges. In the civil context, the seriousness of a case is usually determined through the amount of money sought in compensation, while for criminal matters seriousness is determined by the nature of the offence alleged. Figure 11.10 illustrates the arrangement of the court system in Australia.

The hierarchy of courts also applies to the system of appeals. Appeals are available to the losing side in a civil matter, and to the defendant in a criminal matter, from all levels of court. The High Court of Australia is the highest court of appeal for both criminal and civil cases.

While the civil jurisdiction and system of appeals are important aspects of the justice system, the section below focuses on the criminal jurisdiction of the courts.

## Criminal courts

All Australian States and Territories have a system of courts for the hearing of criminal matters. Once charges are laid by police, the court will hear evidence by both prosecution and defence, and will make a decision as to whether or not the defendant is guilty. In cases where the defendant is found guilty, the court may also record a conviction and impose a penalty.

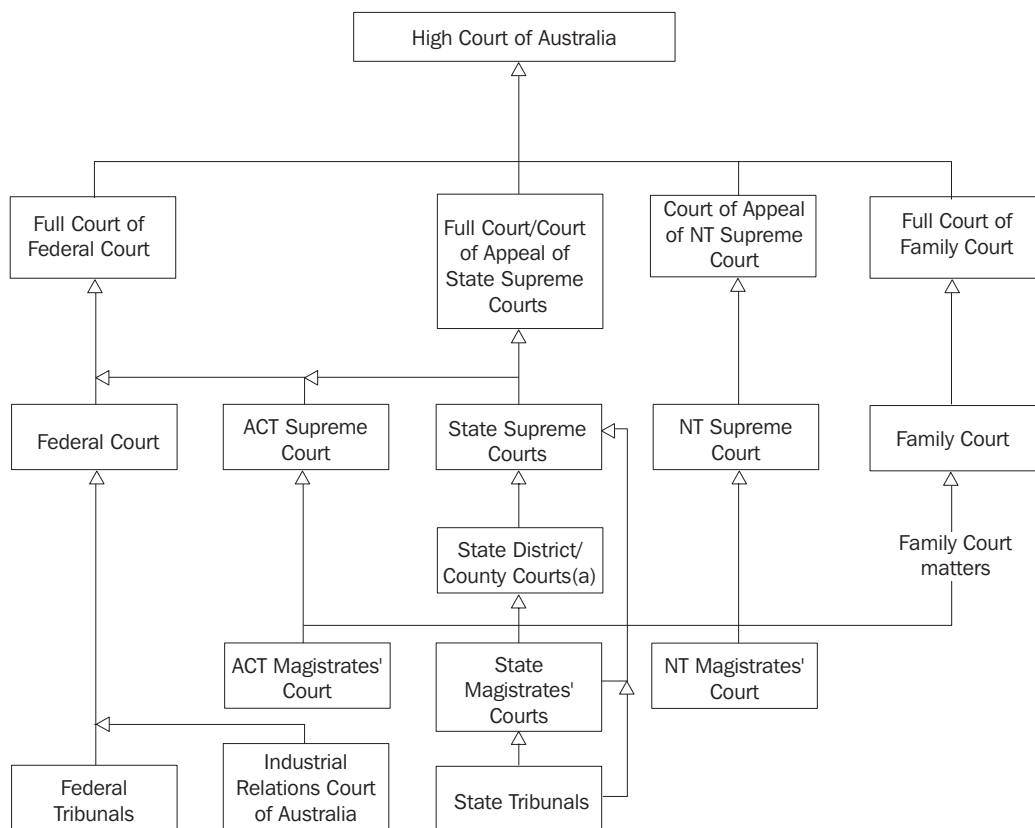
The courts in Australia are arranged hierarchically. The lowest level of criminal court is the Magistrate's Court or Court of Summary Jurisdiction. The majority of all criminal cases are heard in these courts. Cases heard in Magistrates' Courts do not involve a jury; the magistrate acts to determine the guilt of the defendant. This is known as a summary proceeding. Only relatively minor offences can be dealt with in this way. More serious offences are dealt with by the higher levels of court. All States and Territories have a Supreme Court, which can deal with all criminal matters. The larger jurisdictions also have an intermediate level of court, known as the District or County Court, which deals with the majority of serious offences. The Supreme Court and Intermediate Court are collectively referred to as the Higher Courts.

All offences which are dealt with by the Higher Courts have an automatic entitlement to a trial before a judge and jury. In some jurisdictions, the defendant may elect to have the matter heard before a judge alone. Offences which must be heard before a judge and jury are known as indictable offences. These include offences such as murder and drug importation as well as serious sexual offences, robberies and assaults.

The defendant in a criminal matter is entitled to appeal against the conviction or the severity of penalty imposed. Under some circumstances,

the prosecution is also entitled to appeal against the leniency of the penalty. The States and Territories differ in the ways in which they deal with appeals. Some appeals from Magistrates' Courts may be heard before the Intermediate Courts. In other jurisdictions, the Supreme Court may hear these appeals. In most jurisdictions, an appeal court or Court of Criminal Appeal may be constituted to hear appeals from the Supreme or Intermediate Courts. In Australia, the highest court of appeal from all jurisdictions is the High Court of Australia.

### 11.10 HIERARCHY OF COURTS



(a) There is no Intermediate (District or County) Court in Tasmania.

Source: Steering Committee for the Review of Commonwealth/State Service Provision, *Report on Government Services 1998*.

## National criminal courts statistics

The aim of national criminal courts statistics is to provide comparable data across the States and Territories. The data provided are indicators of the volume and flow of criminal matters through the Supreme and Intermediate Courts (together comprising the Higher Courts), and provide a basis for measuring changes over time.

## Higher criminal courts

Table 11.11 summarises the flow of defendants through the Higher Courts during 1996–97. The workload of the criminal courts can be shown by the number of defendants involved in cases started before 1996–97 and still being processed (pending at start) and the number of defendants with cases started in the Higher Courts during 1996–97 (initiated). Excluding defendants in Queensland, there were 6,477 defendants pending at the start of 1996–97 and

10,018 defendants initiated during 1996–97, giving a total workload of 16,495 defendants who had criminal cases active at some time during 1996–97. Of this total workload, 9,393 defendants (56.9%) were finalised in the Higher Courts during 1996–97.

Table 11.12 indicates the methods by which defendants involved in criminal cases were finalised in the Higher Court system during 1996–97. A defendant is regarded as finalised when all the charges laid against them have been concluded in some manner. In Australia, there were 15,657 defendants finalised in the Higher Criminal Courts during 1996–97. Of the 13,538 defendants finalised as a result of the charges being adjudicated (proven guilty or acquitted), 90% had at least one charge with a proven outcome (guilty verdict or guilty plea) while the other 10% were acquitted.

**11.11 DEFENDANTS INITIATED, FINALISED AND PENDING—1996–97(a)**

Court level/Status	NSW	Vic.	Qld(b)	SA	WA	Tas.	NT	ACT	Aust.
SUPREME COURT									
Pending at start	156	51	n.a.	87	204	123	141	81	n.a.
Initiated	112	89	n.a.	67	254	321	286	175	n.a.
Transferred in	—	2	n.a.	53	24	..	..	..	n.a.
Transferred out	3	5	n.a.	21	52	..	..	..	n.a.
Finalised	78	68	743	122	296	324	226	150	2 007
Pending at end	187	69	n.a.	64	134	120	201	106	n.a.
INTERMEDIATE COURT(c)									
Pending at start	3 040	979	n.a.	600	1 015	..	..	..	n.a.
Initiated	3 896	1 561	n.a.	1 037	2 220	..	..	..	n.a.
Transferred in	3	5	n.a.	21	52	..	..	..	n.a.
Transferred out	—	2	n.a.	53	24	..	..	..	n.a.
Finalised	3 371	1 597	5 521	1 166	1 995	..	..	..	13 650
Pending at end	3 568	946	n.a.	439	1 268	..	..	..	n.a.
TOTAL HIGHER COURTS									
Pending at start	3 196	1 030	n.a.	687	1 219	123	141	81	n.a.
Initiated	4 008	1 650	5 688	1 104	2 474	321	286	175	15 706
Transferred in	3	7	n.a.	74	76	..	..	..	n.a.
Transferred out	3	7	n.a.	74	76	..	..	..	n.a.
Finalised	3 449	1 665	6 264	1 288	2 291	324	226	150	15 657
Pending at end	3 755	1 015	n.a.	503	1 402	120	201	106	n.a.
TOTAL HIGHER COURTS—RATE PER 100,000 ADULT PERSONS									
Pending at start	67.2	29.4	n.a.	60.4	91.2	34.7	108.5	34.9	n.a.
Total initiated	84.3	47.0	224.5	97.0	185.2	90.5	220.1	75.4	112.3
Total finalised	72.6	47.5	247.2	113.2	171.5	91.4	173.9	64.6	111.9
Pending at end	79.0	28.9	n.a.	44.2	104.9	33.8	154.7	45.7	n.a.

(a) Data exclude defendants in appeal cases. (b) Initiation data for Qld only include defendants committed; data for other methods of initiation are not currently available. The Qld data for 'finalised' exclude bench warrants being issued. Counts of defendants pending and defendants transferred are not currently available for Qld. (c) There is no Intermediate Court in Tas., the NT or the ACT.

Source: *Higher Criminal Courts, Australia, 1996–97 (4513.0)*.

**11.12 DEFENDANTS FINALISED, By Method of Finalisation—1996–97(a)**

Method of finalisation	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
<b>SUPREME COURT</b>									
Adjudicated									
Acquitted	12	12	22	24	24	18	18	11	141
Proven guilty									
Guilty verdict	24	28	46	33	79	41	24	21	296
Guilty plea	40	25	599	43	167	217	145	90	1 326
Total proven guilty	64	53	645	76	246	258	169	111	1 622
Total adjudicated	76	65	667	100	270	276	187	122	1 763
Non-adjudicated									
Bench warrant issued	—	1	n.a.	5	10	10	22	4	(c)52
Withdrawn	2	2	75	16	15	34	15	15	174
Other finalisation(b)	—	—	1	1	1	4	2	9	18
Total non-adjudicated	2	3	(c)76	22	26	48	39	28	(c)244
<b>Total defendants finalised</b>	<b>78</b>	<b>68</b>	<b>(c)743</b>	<b>122</b>	<b>296</b>	<b>324</b>	<b>226</b>	<b>150</b>	<b>(c)2 007</b>
<b>INTERMEDIATE COURT(d)</b>									
Adjudicated									
Acquitted	436	184	313	96	182	..	..	..	1 211
Proven guilty									
Guilty verdict	348	190	152	113	297	..	..	..	1 100
Guilty plea	2 067	1 071	3 820	669	1 282	..	..	..	8 909
Proven guilty n.f.d.(e)	—	—	555	—	—	..	..	..	555
Total proven guilty	2 415	1 261	4 527	782	1 579	..	..	..	10 564
Total adjudicated	2 851	1 445	4 840	878	1 761	..	..	..	11 775
Non-adjudicated									
Bench warrant issued	182	29	n.a.	64	76	..	..	..	(c)351
Withdrawn	315	121	681	212	144	..	..	..	1 473
Other finalisation(b)	23	2	—	12	14	..	..	..	51
Total non-adjudicated	520	152	(c)681	288	234	..	..	..	(c)1 875
<b>Total defendants finalised</b>	<b>3 371</b>	<b>1 597</b>	<b>(c)5 521</b>	<b>1 166</b>	<b>1 995</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>(c)13 650</b>
<b>TOTAL HIGHER COURTS(d)</b>									
Adjudicated									
Acquitted	448	196	335	120	206	18	18	11	1 352
Proven guilty									
Guilty verdict	372	218	198	146	376	41	24	21	1 396
Guilty plea	2 107	1 096	4 419	712	1 449	217	145	90	10 235
Proven guilty n.f.d.(e)	—	—	555	—	—	—	—	—	555
Total proven guilty	2 479	1 314	5 172	858	1 825	258	169	111	12 186
Total adjudicated	2 927	1 510	5 507	978	2 031	276	187	122	13 538
Non-adjudicated									
Bench warrant issued	182	30	n.a.	69	86	10	22	4	(c)403
Withdrawn	317	123	756	228	159	34	15	15	1 647
Other finalisation(b)	23	2	1	13	15	4	2	9	69
Total non-adjudicated	522	155	(c)757	310	260	48	39	28	(c)2 119
<b>Total defendants finalised</b>	<b>3 449</b>	<b>1 665</b>	<b>(c)6 264</b>	<b>1 288</b>	<b>2 291</b>	<b>324</b>	<b>226</b>	<b>150</b>	<b>(c)15 657</b>

(a) Data exclude defendants finalised in appeal cases. (b) Includes defendants who were withdrawn by the prosecution, transferred to another court level or finalised by another non-adjudicated method. (c) These totals exclude Qld defendants finalised by a bench warrant being issued. (d) There is no Intermediate Court in Tas., the NT or the ACT. (e) Where the distinction between Guilty verdict and Guilty plea is unavailable, data are classified to Proven guilty n.f.d.

Source: *Higher Criminal Courts, Australia, 1996–97* (4513.0).

The process involved in adjudicating criminal charges depends on how a defendant pleads to the charges laid against them. Defendants who plead guilty to all charges are not subject to a jury trial and go through a sentence hearing to determine the penalty. In contrast, defendants who plead not guilty to at least one charge are typically subject to a trial by jury which

determines whether they are acquitted or found guilty. Information on the pleas entered by defendants at the start of their criminal cases provides an indication of the potential need for trials in the Higher Courts, while information on the final pleas entered by defendants provides an indication of the trials that were actually completed.

A large number of defendants initially plead not guilty and then change their plea to guilty during the course of criminal proceedings in the Higher Courts. Table 11.13 indicates the proportion of defendants finalised by an adjudicated method during 1996–97 who changed their plea to guilty and therefore did not require a trial. Information on initial and final pleas was not available for Queensland and the Northern Territory. In the other States and the Australian Capital Territory, almost half (49%) of the Higher Court defendants who had an initial plea of not guilty later changed their plea to guilty.

**11.13 DEFENDANTS FINALISED BY ADJUDICATION(a), Proportion who Changed Plea to Guilty**

State	Not guilty plea at start	% changed plea to guilty
NSW	2 134	46.1
Vic.	862	52.1
Qld(b)	n.a.	n.a.
SA	821	62.2
WA	976	38.7
Tas.	207	71.5
NT(b)	n.a.	n.a.
ACT	51	37.3
Aust.	n.a.	n.a.

(a) Includes defendants who were acquitted, pleaded guilty or received a guilty verdict. (b) Information on both initial and final pleas was not available in Qld and the NT.

Source: *Higher Criminal Courts, Australia, 1996–97* (4513.0).

For defendants who have been dealt with by the courts, duration figures are available that indicate the elapsed time taken to finalise all charges for a defendant from the date the defendant's case commenced. The total duration for a finalised defendant includes the time taken by the defence and prosecution to prepare their cases, the time taken to list the case and the actual time taken for any hearings.

Table 11.14 provides median duration statistics from initiation to finalisation for defendants in each State and Territory. During 1996–97, the median duration for defendants finalised in the Higher Courts was longest in New South Wales at 30.7 weeks, and shortest in Western Australia and Tasmania at 13.0 weeks and 13.9 weeks respectively. The median duration is longer for some methods of finalisation than for others: in most States and Territories, it takes longer for a defendant to be finalised if they have a guilty verdict than if they plead guilty or if they are acquitted.

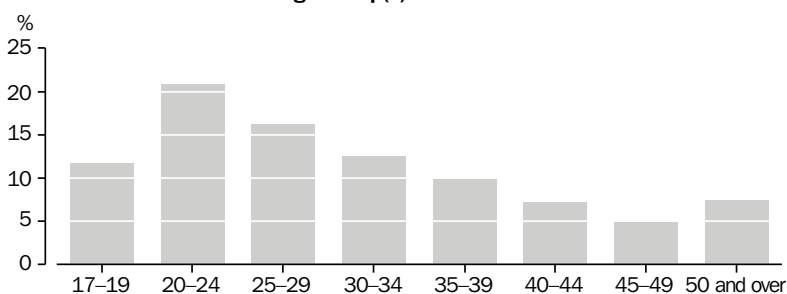
Graph 11.15 shows the proportion of defendants finalised during 1996–97 by age group. Over 60% of defendants finalised in the Higher Criminal Courts during 1996–97 were aged between 17 and 34 years. One in five defendants (20.8%) were in the 20–24 year age group. The median age of defendants finalised was 28.8 years. Most defendants dealt with in the Higher Courts during 1996–97 were male (88.5%).

**11.14 MEDIAN DURATION (WEEKS) TO FINALISATION FOR DEFENDANTS—1996–97(a)**

Court level/method of finalisation	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
<b>SUPREME COURT</b>									
Acquitted	95.8	49.6	41.1	31.9	51.0	20.9	42.0	55.3	36.7
Guilty verdict	73.1	34.6	33.5	46.7	51.7	18.1	36.9	61.1	40.0
Guilty plea	69.3	22.7	22.6	32.7	11.9	12.0	17.0	12.6	17.8
Other finalisation(b)	123.9	18.3	35.4	32.2	18.8	15.9	21.7	37.3	27.1
<i>Total defendants finalised</i>	<i>71.1</i>	<i>28.9</i>	<i>26.0</i>	<i>35.6</i>	<i>16.4</i>	<i>13.9</i>	<i>21.1</i>	<i>16.6</i>	<i>22.3</i>
<b>INTERMEDIATE COURT(c)</b>									
Acquitted	48.2	37.8	27.0	32.9	50.1	..	..	..	39.0
Guilty verdict	60.1	38.9	32.7	34.1	48.1	..	..	..	44.6
Guilty plea	24.1	15.9	14.1	17.7	8.6	..	..	..	15.0
Proven guilty n.f.d.(d)	—	—	22.1	—	—	..	..	..	22.1
Other finalisation(b)	29.8	32.7	24.9	16.1	17.4	..	..	..	24.1
<i>Total defendants finalised</i>	<i>30.0</i>	<i>22.0</i>	<i>16.4</i>	<i>20.1</i>	<i>12.4</i>	<i>..</i>	<i>..</i>	<i>..</i>	<i>19.3</i>
<b>TOTAL HIGHER COURTS(c)</b>									
Acquitted	49.3	38.2	27.7	32.7	50.1	20.9	42.0	55.3	38.8
Guilty verdict	60.8	37.1	33.3	36.8	48.6	18.1	36.9	61.1	43.8
Guilty plea	24.6	15.9	15.0	18.6	9.1	12.0	17.0	12.6	15.3
Proven guilty n.f.d.(d)	—	—	22.1	—	—	—	—	—	22.1
Other finalisation(b)	29.9	32.4	25.6	16.4	17.4	15.9	21.7	37.3	24.4
<b>Total defendants finalised</b>	<b>30.7</b>	<b>22.9</b>	<b>17.3</b>	<b>20.9</b>	<b>13.0</b>	<b>13.9</b>	<b>21.1</b>	<b>16.6</b>	<b>19.7</b>

(a) Data exclude defendants finalised in appeal cases. (b) Includes defendants who were withdrawn by the prosecution, transferred to another court level or finalised by another non-adjudicated method. (c) There is no Intermediate Court in Tas., the NT or the ACT. (d) Where the distinction between Guilty verdict and Guilty plea is unavailable, data are classified to Proven guilty n.f.d.

Source: *Higher Criminal Courts, Australia, 1996–97* (4513.0).

**11.15 TOTAL HIGHER COURTS—DEFENDANTS FINALISED, Proportion by Age Group(a)—1996–97**

(a) Age is calculated at the defendant's date of finalisation. Excludes Queensland defendants finalised by a bench warrant being issued.

Source: *Higher Criminal Courts, Australia, 1996–97* (4513.0).



**11.16 CRIMINAL COURT CASES(a)(b), By Court Level—1996–97**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Court level	'000	'000	'000	'000	'000	'000	'000	'000	'000
Supreme Court	0.9	0.6	1.4	0.6	0.5	0.4	0.3	0.2	5.1
District/County Court(c)	10.1	3.9	8.3	1.8	2.4	..	..	..	26.5
Magistrates Court	435.0	491.9	245.6	151.0	121.6	37.3	19.5	10.6	1 512.4
<b>Total</b>	<b>446.0</b>	<b>496.4</b>	<b>255.3</b>	<b>153.4</b>	<b>124.5</b>	<b>37.7</b>	<b>19.8</b>	<b>10.8</b>	<b>1 544.0</b>

(a) Cases are defined as one defendant with one or more criminal matters before the courts or involving more than one defendants. (b) Data include appeal and non-appeal cases. (c) The Northern Territory, the Australian Capital Territory and Tasmania do not have District/County Courts.

Source: Steering Committee for the Review of Commonwealth/State Service Provision, *Report on Government Services 1998*.

### Total criminal cases

Table 11.16 shows the total number of criminal cases handled in the courts of Australia, including appeal and non-appeal cases. Of all the criminal cases filed in Australia during 1996–97, 98% were filed in the Magistrates' Courts, with New South Wales and Victoria contributing 61% to the national total. A large proportion of cases in the Magistrates' Court in most States and Territories are minor traffic matters.

### Corrective services

Corrective services are responsible for administering those penalties and orders handed down by the criminal courts which require some form of supervision or custody of the offender. This may include imprisonment on either a full or part-time basis, community service and other forms of supervised work, home detention or good behaviour bonds under supervision. Most persons for whom corrective services have responsibility have received a sentence from a criminal court, but some persons have been given orders pending judgement or sentencing (e.g. unsentenced prisoners).

All States and Territories operate prisons and other corrective services. Separate provisions exist in each State and Territory for dealing with juvenile offenders. Convicted adult prisoners from the Australian Capital Territory serve their sentences in New South Wales prisons, but local

provision is made for the custody of unsentenced prisoners and periodic detainees, and for community corrections (e.g. probation and parole). The Commonwealth Government does not operate any prisons or other corrective services, as federal offenders (persons convicted of offences under Commonwealth laws) are supervised by State agencies for correctional purposes.

A number of jurisdictions have established or are examining the possibility of establishing privately operated prison facilities. These prisons operate in conjunction with State operated prisons and are monitored by the Corrective Services authorities in a similar manner to State operated prisons. There is likely to be an increasing trend towards this type of arrangement in future.

In the *Report on Government Services 1998*, Corrective Services comprise prison, community custody, community supervision and periodic detention. Community custody is defined as confinement to a facility, dwelling or property which is not a proclaimed prison. In 1996–97, the total number of persons under the authority of Corrective Services was 71,219, of whom 52,146 were in community supervision and 16,921 were in prison (table 11.17).

While the community based corrections system is an important aspect of the corrective services system, the following commentary focuses on offenders in prisons.

**11.17 OFFENDERS, By Type of Detention—1996–97**

Type of detention	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)	Aust.
NUMBER									
Prisons	6 323	2 478	3 563	1 475	2 231	272	541	143	16 921
Community custody(b)	18	..	359	108	..	..	47	..	532
Community supervision	14 578	7 063	14 966	7 381	4 659	1 765	1 192	542	52 146
Periodic detention	1 562	..	..	..	..	..	..	61	1 623
<i>Total</i>	<i>22 481</i>	<i>9 541</i>	<i>18 888</i>	<i>8 964</i>	<i>6 890</i>	<i>2 035</i>	<i>1 780</i>	<i>640</i>	<i>71 219</i>
RATE PER 100,000 ADULTS(c)									
Prisons	132.0	70.6	137.6	128.5	165.0	75.6	427.7	60.6	120.0
Community custody(b)	0.4	..	13.9	9.4	..	..	37.2	..	3.8
Community supervision(d)	304.8	201.1	577.8	643.0	344.6	494.7	942.4	228.9	396.7
Periodic detention(e)	32.7	..	..	..	..	..	..	25.6	11.5
<i>Total</i>	<i>470.0</i>	<i>271.7</i>	<i>729.3</i>	<i>780.9</i>	<i>509.6</i>	<i>570.4</i>	<i>1 407.2</i>	<i>270.5</i>	<i>505.0</i>

(a) The ACT rate included prisoners held in NSW prisons. (b) Victoria, WA, Tasmania and the ACT did not use community custody as a sentencing option. (c) Based on average daily offender numbers in 1996–97. (d) The NSW policy of allowing termination of community supervision orders prior to expiry of the order when program goals have been achieved, leads to a relative underestimate of persons serving community supervision orders in NSW. (e) Only NSW and the ACT used periodic detention as a sentencing option.

Source: Steering Committee for the Review of Commonwealth/State Service Provision, *Report on Government Services, 1998*.

**Prisoners in Australia**

The annual National Prisoner Census, conducted on the night of 30 June, counts all persons who are held in custody in gazetted Australian prisons for adult offenders at that time. The National Prisoner Census was conducted by the Australian Institute of Criminology from 1982 to 1993, and by the ABS since 1994. The Prisoner Census provides a snapshot of the number of persons in prison, and is not representative of the flow of prisoners. The majority of prisoners in the Prisoner Census are serving long sentences for relatively serious offences, but the flow of offenders in and out of prisons consists primarily of persons serving short sentences for relatively minor offences.

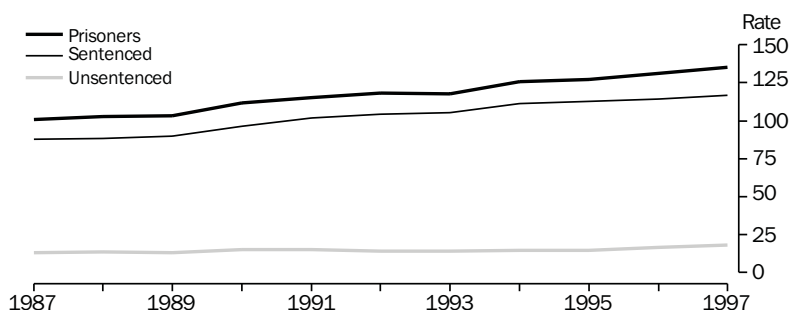
Based on the results of the Prisoner Census, the total prison population in Australia increased from 12,113 in 1987 to 19,082 in 1997. The proportion of unsentenced prisoners increased marginally, from 13.0% in 1987 to 13.4% in 1997. Factors influencing the size of the prison population over this period include: legislative changes affecting the length of time prisoners spend in prison; the abolition of a sentence reducing mechanism such as remission; significant court delays leading to an increase in unsentenced prisoners in some jurisdictions;

changes to the ways in which minor offences are dealt with, particularly fine default; and the growth of the Australian resident population. Graph 11.18 shows a time series of the rate of adult prisoners per 100,000 adult population. The rate has slowly increased since 1989.

Most prisoners in Australia in 1997 were male (94%). The average prisoner age was 32 years, increasing from 30 years in 1987.

The ABS collects monthly information on the number of prisoners, including counts of prisoners received as sentenced, although this information is less detailed than that in the annual Prisoner Census. Table 11.19 shows the average daily population of prisoners, by sex and jurisdiction. In June 1998, the prison population in Australia averaged 18,818, a rate of 133.9 per 100,000 adult population.

Imprisonment rates vary between jurisdictions (graph 11.20). In June 1998, the highest average daily prison population rate (458.7 per 100,000 adult population) was recorded by the Northern Territory, which was over twice the next highest rate, recorded in Queensland (188.9 per 100,000 adult population).

**11.18 IMPRISONMENT RATE(a)**

(a) The data are a snapshot of the prison population as at 30 June each year. The rate is per 100,000 adult persons.

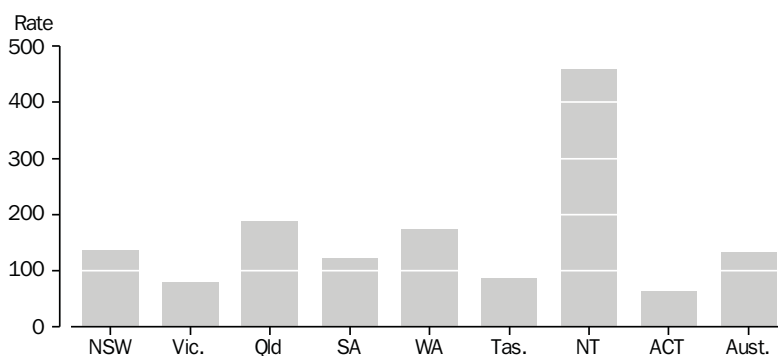
Source: *Australian Prisoners*, Australian Institute of Criminology, 1987 to 1993; and *Prisoners in Australia*, 1994 to 1997, a report prepared by the ABS.

**11.19 AVERAGE DAILY PRISONER POPULATION, By Sex—June 1998**

Sex	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT in NSW(a)	ACT remand	Aust.
NUMBER										
Males	6 096	2 677	4 622	1 283	2 177	293	582	106	32	17 763
Females	347	160	260	82	159	13	29	6	4	1 055
Persons	6 443	2 837	4 882	1 365	2 336	306	612	112	36	18 818
RATE PER 100,000 ADULTS										
Males	257.5	148.7	357.4	247.8	316.1	151.3	794.8	99.3	24.4	252.6
Females	14.4	8.8	20.0	14.2	23.8	7.4	47.1	5.1	3.1	14.8
Persons	136.3	79.9	188.9	121.2	174.8	86.5	458.7	48.0	15.4	133.9

(a) Prisoners sentenced to full-time custody in the Australian Capital Territory are held in New South Wales prisons and are included in the New South Wales figures. The Australian Capital Territory in New South Wales figures are a subset of the New South Wales figures and are not included in the totals for Australia.

Source: *Corrective Services, Australia, June Quarter 1998 (4512.0)*.

**11.20 IMPRISONMENT RATE(a)—June 1998**

(a) Rate per 100,000 adult persons.

Source: *Corrective Services, Australia, June Quarter 1998 (4512.0)*.

**11.21 SENTENCED PRISONERS, By Most Serious Offence(a)—1997**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(b)	Aust.	Aust.
Offence category	%	%	%	%	%	%	%	%	%	no.
Homicide	7.5	11.9	10.4	10.6	9.2	18.2	9.2	11.8	9.3	<b>1 541</b>
Assault	13.1	6.7	12.8	14.1	10.3	8.7	21.7	8.2	12.1	<b>2 006</b>
Sex offences	9.4	18.2	16.2	9.6	19.1	12.6	7.1	9.1	13.1	<b>2 171</b>
Robbery	12.8	8.1	15.2	14.6	15.5	9.1	4.5	16.4	12.8	<b>2 112</b>
Break and enter	13.2	12.4	15.4	14.6	15.1	10.4	13.1	11.8	13.8	<b>2 282</b>
Fraud and misappropriation	5.6	3.8	3.2	7.4	3.3	2.2	1.3	1.8	4.6	<b>753</b>
Other theft	7.2	12.2	4.0	3.1	5.9	6.5	9.4	13.6	6.8	<b>1 130</b>
Government security(c)	5.7	7.9	5.1	6.0	6.5	10.4	6.0	6.4	6.1	<b>1 001</b>
Drug offences	13.4	8.8	7.3	7.4	6.7	2.6	3.4	14.5	9.8	<b>1 624</b>
Driving offences	6.6	0.7	2.6	1.8	1.9	8.2	11.4	0.9	4.3	<b>705</b>
Other offences	5.5	9.3	7.8	10.8	6.5	11.1	12.9	5.5	11.6	<b>1 197</b>
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>16 522</b>

(a) The most serious offence is the offence with the longest sentence a prisoner has received. Where the sentences are equal, or the longest sentence cannot be determined, the most serious offence is the offence with the lowest Australian National Classification of Offences (ANCO) code. (b) Prisoners sentenced to full-time custody in the ACT are held in NSW prisons and are also included in the NSW figures. (c) Government security also includes Justice procedures.

Source: *Prisoners in Australia, 1997—A report prepared for the Corrective Services Ministers' Council by the National Correctional Services Statistics Unit, ABS.*

**Most serious offence**

Table 11.21 shows, for 1997, the proportion of sentenced prisoners by most serious offence for each State and Territory. The most serious offence is the offence for which prisoners have received the longest sentence.

Nearly half (48%) of all sentenced prisoners were convicted of offences involving violence or the threat of violence including: murder (6.5%), other homicide (2.8%), assault (12.1%), sex offences (13.1%), other offences against the person (1.0%) and robbery (12.8%). Sentenced prisoners convicted of a property offence as the most serious offence represented 26.8% of all sentenced prisoners, including 13.8% sentenced for break and enter.

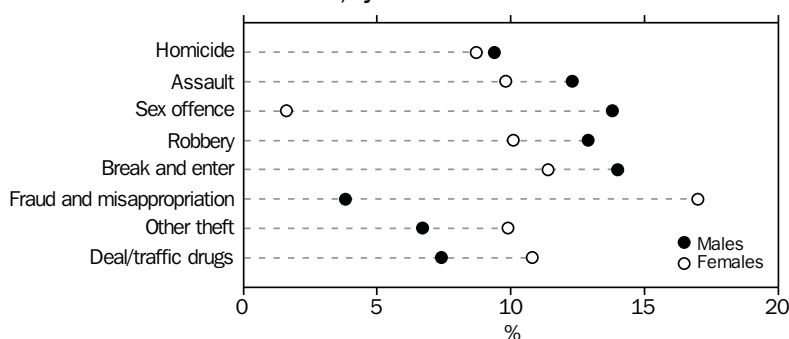
Nationally, almost one in ten prisoners (9.8%) was serving a sentence for a drug offence as the most serious offence. Of the prisoners from the Australian Capital Territory, 14.5% were in prison with drug dealing or trafficking offences as the most serious offence, compared to Tasmania where 2.6% of prisoners fell into this category.

The national proportion of sentenced prisoners with driving offences as the most serious offence was 4.3%, compared to the Northern Territory with 11.4%. Similarly, 7.5% of prisoners in the Northern Territory were in prison due to licence/registration offences, compared to the national figure of 1.8%.

Western Australia and Victoria had the greatest proportion of prisoners who were sentenced for sex offences as the most serious offence (19.1% and 18.2% respectively). The Northern Territory had the greatest proportion of prisoners sentenced for assault offences (21.7%), compared to Victoria which recorded the lowest proportion (6.7%).

There was variation in the types of offences for which men and women were sentenced to imprisonment, reflecting the differences in the patterns of offending between men and women. The most common offences for males in 1997 were break and enter, sex offences, robbery and assault. For females, the most common offences were fraud and misappropriation, break and enter, dealing and trafficking in drugs, and robbery.

Aggregate length of sentence is a measure of the sentences imposed on an offender, taking multiple offences into account. It is not measured for prisoners who receive an indeterminate type of sentence such as life, and periodic detainees' sentences are measured separately. On 30 June 1997, 35.9% of all prisoners had aggregate sentences at least one year and less than five years in length, 20.4% at least five years and less than ten years, and 19.3% less than one year.

**11.22 SENTENCED PRISONERS, By Sex and Selected Most Serious Offence**

Source: *Prisoners in Australia, 1997—A report prepared for the Corrective Services Ministers' Council by the National Correctional Services Statistics Unit, ABS.*

In most States and Territories the proportion of prisoners with aggregate sentences of at least one year and less than five years was substantially higher than the proportion of prisoners with other aggregate sentences, with the exception of the Northern Territory and Tasmania; for the Northern Territory the proportion of prisoners

with aggregate sentences of less than one year was slightly higher, and for Tasmania it was slightly lower.

Prisoners with indeterminate sentences made up 4.6% of all prisoners; periodic detainees represented 8.4%.

**11.23 SENTENCED PRISONERS, Proportion by Aggregate Length of Sentence(a)(b)**

	Less than 1 year	1 to <5 years	5 to <10 years	10 years and over	Indeterminate (e.g. life)
State	%	%	%	%	%
NSW(c)	17.3	31.2	17.3	9.7	2.3
Vic.	29.3	37.2	19.8	11.7	2.0
Qld	19.4	35.0	25.1	13.2	7.2
SA	19.5	40.0	24.1	7.9	8.6
WA	8.1	49.6	24.5	10.1	7.8
Tas.	31.6	33.3	13.4	8.2	13.5
NT	39.1	38.2	12.9	4.9	4.9
ACT(c)	8.1	40.0	30.9	17.3	3.6
<b>Aust.</b>	<b>19.3</b>	<b>35.9</b>	<b>20.4</b>	<b>10.4</b>	<b>4.6</b>

(a) Excludes periodic detainees. (b) The aggregate sentence is the longest period that the offender may be detained under sentence in the current episode. Charges pending which are likely to extend the current episode are ignored. (c) Prisoners sentenced to full-time custody in the ACT are held in NSW prisons and are also included in the NSW figures.

Source: *Prisoners in Australia, 1997—A report prepared for the Corrective Services Ministers' Council by the National Correctional Services Statistics Unit, ABS.*

### Indigenous prisoners

To measure Indigenous imprisonment in Australia three different indices are used: the number of Indigenous prisoners; the number as a proportion of the adult Indigenous population (rate per 100,000 adult Indigenous population); and the comparison (ratio) of Indigenous to non-Indigenous rates of imprisonment (table 11.24). Imprisonment rates per 100,000 adult Indigenous population enable the comparison of Indigenous imprisonment across the States and Territories, while the latter ratio indicates the extent to which the imprisonment rates of Indigenous persons exceed the imprisonment rates of non-Indigenous persons.

Information on Indigenous prisoners is not currently available for NSW. Of the other States and Territories, on 1 June 1998 the highest number of Indigenous persons in prison custody was recorded in Queensland (1,075). The highest rate of Indigenous imprisonment was recorded in WA (2,357 Indigenous persons per 100,000 adult Indigenous population) and the highest ratio of Indigenous to non-Indigenous rates of imprisonment was also recorded in WA, which had an Indigenous rate of imprisonment 20 times the non-Indigenous rate.

**11.24 INDIGENOUS IMPRISONMENT—1 June 1998**

	NSW(a)	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)
Number	n.a.	122	1 075	242	747	31	426	7
Rate(b)	n.a.	910.5	1 762.7	1 934.5	2 356.8	351.2	1 360.9	n.p.
Ratio(c)	n.a.	11.9	11.7	19.0	20.0	4.7	8.3	n.p.

(a) The number of Indigenous prisoners sentenced in the Australian Capital Territory and held in New South Wales prisons has been subtracted from the New South Wales figures and added to the Australian Capital Territory remand figures to provide total figures for the Australian Capital Territory. (b) Rate of Indigenous prisoners per 100,000 adult Indigenous population. (c) Ratio of Indigenous to non-Indigenous rates of imprisonment.

Source: *Corrective Services, Australia, June Quarter 1998* (4512.0).

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# National Aboriginal and Torres Strait Islander Survey: law and justice issues

## Introduction

The operation of the criminal justice system, including law enforcement, the courts and incarceration, are matters of public policy which impact particularly heavily on some sectors of the Aboriginal and Torres Strait Islander population. This was highlighted through the work of the Royal Commission into Aboriginal Deaths in Custody which presented its National Report in 1991.

The Royal Commission found that, generally speaking, the disproportionate level of custodial deaths of Aboriginal and Torres Strait Islander people which occurred nationally in the 1980s was a result of their disproportionate levels of incarceration, rather than systematic patterns of foul play, deliberate violence or brutality on the part of police or prison officers. It argued that the causes of the disproportionate involvement of Aboriginal and Torres Strait Islander people in the criminal justice system are to be found in the different levels and patterns of offending of Aboriginal and Torres Strait Islander people compared with those of other backgrounds; in the different patterns of policing and the operation of the courts; and in lifestyle differences, with Aboriginal and Torres Strait Islander people being disadvantaged in various domains including schooling, employment, health and housing, and experiencing discrimination, dispossession from land and the former policies of the forced removal of children from their families (Royal Commission into Aboriginal Deaths in Custody, 1991).

Owing to the absence of high quality information in many of these areas, the Royal Commission recommended, and all Australian Governments agreed, that the National Aboriginal and Torres Strait Islander Survey be conducted by the Australian Bureau of Statistics.

The 1994 National Aboriginal and Torres Strait Islander Survey included a number of questions relating to law and justice, its objective being to

fill some of the gaps in information about Aboriginal and Torres Strait Islander people in the criminal justice system.

The survey design used multi-stage sampling, with stratification on Aboriginal and Torres Strait Islander Commission Regions. A sample of approximately 15,700 (about 6.6%) of the Aboriginal and Torres Strait Islander people was interviewed. A sample of prisoners was also included in the survey to ensure that estimates at the State/Northern Territory and national levels reflect the characteristics and attitudes of all Aboriginal and Torres Strait Islander people (ABS, 1994).

## Main findings

Of the 197,500 Aboriginal and Torres Strait Islander people aged 13 years and over in 1994:

- About 37% considered that police do a good job in dealing with crime in their area.
- About 15% reported that they both needed and had used legal services in the 12 months prior to the survey.
- About 45% felt that family violence was a common problem in their area.
- More than one in eight (13%) reported that they were physically attacked or verbally threatened in the 12 months prior to the survey.
- Over 20% reported having been arrested (including being detained by police for public drunkenness) in the five years prior to the survey (i.e. 1989–94).

## Perceptions of police performance

Aboriginal and Torres Strait Islander people other than those in prison were asked about their perceptions of police performance in dealing with crime, violence and family violence



in their local area. Approximately 37% of the persons aged 13 years and over thought that police performed well in dealing with crime and with violence. A lower proportion (30%) expressed satisfaction at police dealings with family violence (table S3.1).

The main reasons given for dissatisfaction with police in dealing with crime, violence and family violence were that they were too slow to respond, they did not have an understanding of Aboriginal and Torres Strait Islander people or culture, and they did not fully investigate. A relatively low proportion of persons gave lack of police or patrol cars as the reason they were dissatisfied with police.

**S3.1 PERCEPTIONS OF POLICE PERFORMANCE(a)—1994**

Perceptions	Dealing with crime %	Dealing with violence %	Dealing with family violence %
Police do a good job	36.9	36.7	30.3
Police sometimes do a good job	16.4	15.7	13.0
Police don't do a good job	27.3	22.3	20.6
Don't know/not stated	19.3	25.3	36.1
Total	100.0	100.0	100.0

(a) By Indigenous persons aged 13 years and over.

Source: National Aboriginal and Torres Strait Islander Survey, Detailed Findings, 1994 (4190.0).

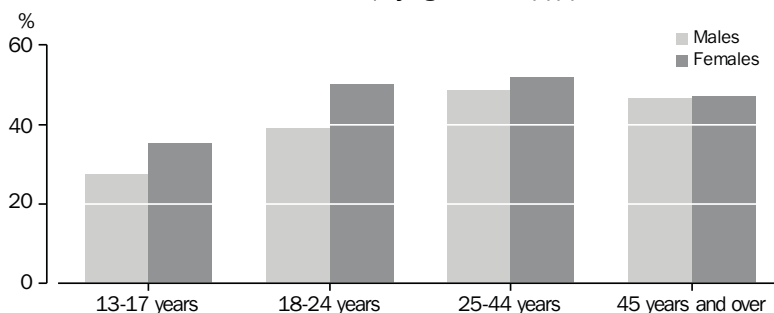
## Perceptions of family violence

In 1994, 45% of Aboriginal and Torres Strait Islander people felt that family violence was a common problem in their area, 24% felt that it was not, and 31% stated that they did not know. While similar proportions of males and females were unsure, a higher proportion of females (48%) than of males (42%) felt it to be a common problem in the local area.

The highest proportion of people who perceived that family violence was a common problem in their area was among people 25–44 years of age. The teenagers 13–17 years old had the lowest level of perception of family violence (31%). The different perceptions of males and females was particularly marked in the 18–24 years age group: while 50% of 18–24 year old females felt family violence to be a common problem in the area, only 39% of males felt this way. Similar proportions of males and females in the older (25–44 and 45+ years) age groups considered that it was a common problem (see graph S3.2).

Although substantial proportions of respondents from both the urban and rural areas saw family violence as a common problem locally, this perception was more widely held in the non-capital city urban areas (51% of respondents) and rural areas (49%) than in the capital cities (32%). Women in the non-capital urban areas were most likely to perceive family violence to be a problem (53%), whereas this was least likely among capital city males (28%).

**S3.2 PERCEPTION: FAMILY VIOLENCE IS A COMMON PROBLEM IN THE LOCAL AREA, By Age and Sex(a)(b)**



(a) Indigenous persons aged 13 years and over. (b) Indigenous persons in prison were not asked this question.

Source: Occasional Paper: Law and Justice Issues, Indigenous Australians, 1994 (4189.0).

## Experience of criminal victimisation

Of Aboriginal and Torres Strait Islander people aged 13 years and above, 13% reported being physically attacked or verbally threatened in the 12 months prior to the survey. This compares with 2.5% of Australians aged 15 years and over who were assaulted (threatened with force or attacked), as measured in the 1993 Crime and Safety Survey (ABS, 1994).

Higher proportions of respondents in capital cities experienced this form of victimisation (17%) than people in other urban areas (12%) or rural areas (10%). Overall, a slightly higher proportion of Aboriginal and Torres Strait Islander males (14%) than females (12%) were attacked or verbally threatened. Males living in the capital cities experienced the highest incidence (19%), almost one in five.

Of the Aboriginal and Torres Strait Islander people aged 13 years and above who were attacked or verbally threatened in the year prior to interview, 66% were attacked or threatened more than once. This compared with 44% of assault victims from the 1993 National Crime and Safety Survey. Overall the frequencies were broadly similar for males and females; 17% of females had been victims ten or more times, compared with 14% of males (see graph S3.3).

About one-third (37%) of the last incidents of attack or verbal threat were reported to the police; 49% of the female victims, compared with 26% of the male victims, reported the last incident to the police.

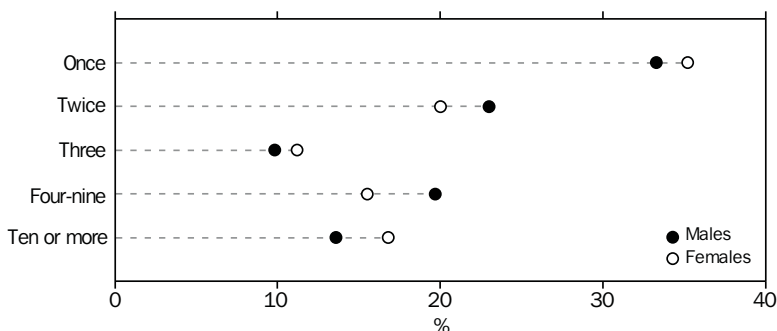
## Experiences with the law

Of the Aboriginal and Torres Strait Islander people aged 13 years and over, more than three times as many males were arrested as females, 31% compared with 9%. Compared with males, females had both lower level of arrests and a higher proportion who had been arrested only once, rather than more than once, over the five-year period (table S3.4).

A higher proportion of males were arrested more than once in the previous five years (19%) than were arrested just once (12%). Both the likelihood of arrest and the frequency of arrest were particularly high among males in the age groups 18–24 years and 25–44 years (47% and 38% respectively) compared with people in the other age groups.

As with males, females aged 18–24 years had a relatively high level of arrests, with 8.4% arrested once over the five years and 7.7% more than once.

**S3.3 INCIDENCE OF BEING ATTACKED OR VERBALLY THREATENED(a)**



(a) Indigenous persons aged 13 years and over who were attacked or verbally threatened in the 12 months prior to the survey.

Source: Occasional paper: Law and Justice Issues, Indigenous Australians, 1994 (4189.0).

**S3.4 NUMBER OF TIMES ARRESTED IN THE LAST FIVE YEARS(a)—1994**

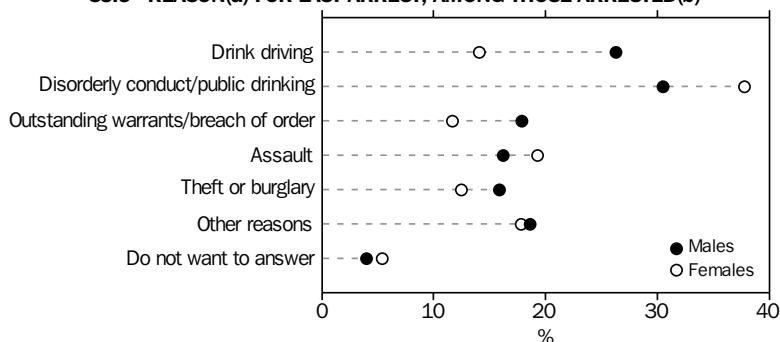
	18–24 years	25–44 years	All ages
	%	%	%
Males			
Arrested once	14.5	13.7	11.6
Arrested more than once	32.0	24.3	19.4
Females			
Arrested once	8.4	6.5	5.3
Arrested more than once	7.7	4.8	4.0

(a) Indigenous persons aged 13 years and over arrested during the five years prior to interview. Percentages refer to proportion of Indigenous population in Australia as a whole.

Source: Occasional Paper: Law and Justice Issues, Indigenous Australians, 1994 (4189.0).

The respondents who had been arrested were asked to identify the reason for their last arrest. Some gave more than one reason. The reason most frequently reported was 'disorderly conduct/drinking in public' at 32%, followed by 'drink driving' offences at 23% (see graph S3.5).

For both male and female Aboriginal and Torres Strait Islander people, disorderly conduct/drinking in public was the most common reason for the most recent arrest, (31% and 38% respectively). The second most common reason for males was drink driving (26%; for females it was assault (19%).

**S3.5 REASON(a) FOR LAST ARREST, AMONG THOSE ARRESTED(b)**

(a) Persons may have given more than one reason for arrest. (b) Indigenous persons 13 years and over.

Source: Occasional Paper: Law and Justice Issues, Indigenous Australians, 1994 (4189.0).

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## Introduction

Cultural and recreational activities are essential to a shared sense of quality of life, and take many forms. At a national level, these forms range across cultural heritage, creative and performing arts, music, literature, film and video, libraries, radio and television, leisure, sports and recreation.

This chapter reviews a range of cultural and recreational activities which Australians undertake, and provides a statistical summary (where available) for those activities.

## Cultural and natural heritage

Australia's heritage is drawn from its cultural and natural environments.

Cultural heritage includes many different types of Indigenous sites, such as ceremonial grounds and rock art galleries, and historic places of significance, such as old towns and residential and commercial buildings, shipwrecks and streetscapes.

Natural heritage includes places which are of scientific, archaeological, aesthetic and ecological importance. It also can include geological features and landscapes. Extensive areas of coastline, forests, wetlands and desert are included in national parks, nature reserves and wilderness areas. Many smaller sites are important habitats for native flora and fauna, enabling the conservation of threatened species. Many natural places are significant to Indigenous communities for cultural reasons.

Conservation of heritage places involves identifying them, surveying their values, classifying and managing them. These functions are shared between all levels of government and their statutory authorities, with assistance from academic and professional bodies, individuals and community conservation organisations such as the National Trusts and conservation councils in each State and Territory.

The Commonwealth Government works in partnership with the community and with State and Territory Governments. It undertakes heritage activities on its own account where the implications of these actions go beyond State or local boundaries. Examples of this include the nomination of sites for World Heritage listing,

the protection of Aboriginal heritage, and advice about proposals which might affect places entered in the Register of the National Estate—Australia's national heritage list.

## National Estate

The term 'the National Estate' was coined by William Clough Ellis, a British architect in the 1940s. It was introduced into Australia when the Federal Government set up a Commission of Inquiry into the National Estate, headed by Hon. Mr Justice R.M. Hope. The inquiry aimed to "preserve and enhance the quality of the National Estate". Following the recommendations of this inquiry, the Australian Heritage Commission Act was passed in 1975 with the support of all political parties.

'The National Estate' is defined in the legislation as:

"... those places, being components of the natural environment of Australia, or the cultural environment of Australia, that have aesthetic, historic, scientific or social significance or other special value for future generations as well as for the present community."

Both publicly and privately owned places form part of the National Estate. It encompasses places which are important to local communities, as well as those which are of regional or State significance. The National Estate also includes places which have national or international significance. Broad stretches of coastline, desert, forest and national parks, as well as isolated geological monuments and small areas which might provide habitats for endangered plant or animal species, are part of the National Estate. It can cover whole villages and suburbs, streetscapes, single mansions, cattlemen's huts, railway yards and other reminders of the evolution of Australia's society and economy. Places of Aboriginal or Torres Strait Islander significance such as rock engravings, galleries of rock art, fish traps, carved trees, meeting places, ceremonial sites, and reminders of early European settlement such as mission stations, are part of Australia's National Estate.

The Australian Heritage Commission has a statutory obligation to identify the National Estate and has established the Register of the National Estate to place on public record Aboriginal, Historic and Natural places to ensure that they are appropriately managed and conserved.

**12.1 PLACES ON THE REGISTER OF THE NATIONAL ESTATE, By Number and Type**

State/Territory	Indigenous places		Historic places		Natural places		Total	
	1996–97	1997–98	1996–97	1997–98	1996–97	1997–98	1996–97	1997–98
New South Wales	214	214	2 857	2 890	432	434	3 503	3 538
Victoria	104	106	2 240	2 255	205	208	2 549	2 569
Queensland	146	147	721	727	266	270	1 133	1 144
Western Australia	74	74	885	889	232	233	1 191	1 196
South Australia	143	145	851	1 034	372	376	1 366	1 555
Tasmania	65	65	1 176	1 175	232	233	1 473	1 473
Northern Territory	88	91	108	106	51	50	247	247
Australian Capital Territory(a)	25	27	138	149	28	30	191	206
External Territories	—	—	16	17	16	16	32	33
<b>Total</b>	<b>859</b>	<b>869</b>	<b>8 992</b>	<b>9 242</b>	<b>1 834</b>	<b>1 850</b>	<b>11 685</b>	<b>11 961</b>

(a) Includes Jervis Bay.

Source: Australian Heritage Commission.

During 1997–98, the number of places in the Register of the National Estate increased by a net 276 to 11,961. This compared with a net increase of 282 in 1996–97. Details by State and type, and comparisons between 1996–97 and 1997–98, are shown in table 12.1.

More comprehensive statistics on the types of places on the National Estate can be found in the annual reports of the Australian Heritage Commission.

### Natural environment

The natural environment includes conservation areas and areas used for outdoor recreation (except sport), such as national terrestrial and marine parks or reserves, other natural areas on the National Estate or equivalent State or Territory government registers, and tourist

caves. Management of the natural environment ensures the conservation of local flora and fauna, controls or excludes the development of the area for fishing, forestry, mining or agriculture and, where appropriate, facilitates access by the general public.

As well as establishing protected areas, governments promote protection of the broader environment through laws and funding programs. These protect the basic environmental support systems, such as waterways, and help to restore degraded areas through tree-planting and bush regeneration schemes.



## National parks

National parks and other protected areas are established under Commonwealth or State/Territory laws. There is no coordinating legislation, although all governments participate in national forums and cooperate in joint programs, such as the National Reserves System, to achieve a common purpose. Most national parks and other protected areas in Australia are declared and managed by State and Territory Governments. The Commonwealth Government declares and manages parks and reserves on land owned or leased by the Commonwealth, in Commonwealth waters and on Aboriginal land leased to the Commonwealth.

Over 50 different designations are given to protected areas by the Commonwealth, State and Territory management agencies, the most common being 'national park' and 'nature reserve'. Management of these different designations varies, from strictly protected areas with limited public access, to areas where recreation is encouraged but resource development is not, to multiple use areas where resource utilisation, recreation and nature conservation are all practised.

### 12.2 VISITORS TO NATIONAL PARKS—1996–97

Visitors	'000
Sex	
Male	1 725
Female	1 613
Total	3 339
Age	
18–24 years	520
25–34 years	846
35–44 years	920
45–54 years	536
55–64 years	281
65 years and over	235
Birthplace	
Australian born	2 528
Overseas born	810

Source: Population Survey Monitor, 1996–97.

## Use of national parks

Table 12.2 gives the numbers and profile of the people visiting national parks in Australia. These findings are derived from an ABS household survey, the Population Survey Monitor, over four quarters in 1996–97, and show that a total of 3.34 million people (or 25.3% of the Australian population aged 18 and over) went to a national park in the three month period preceding conduct of the survey. Of these, 1.73 million were males and 1.61 million were females.

## National park organisations

The ABS Survey of Zoos, Parks and Gardens in respect of 1996–97 showed that there were 684 organisations operating national parks and recreation parks and gardens. These organisations operated 462 individual national parks, 52,164 separate recreational parks and gardens, 270 wildlife sanctuaries, 42 tourist caves, and 24 marine parks at the end of June 1997 (table 12.3).

### 12.3 NATIONAL PARKS AND RECREATIONAL PARKS AND GARDENS, Key Aggregates—1996–97

	Unit	
Organisations at end June 1997	no.	684
Locations at end June 1997		
National parks	no.	462
Recreational parks and gardens	no.	52 164
Wildlife sanctuaries	no.	270
Tourist caves	no.	42
Marine parks	no.	24
Total locations	no.	52 963
Area at end June 1997		
National parks	ha	25 964 351
Recreational parks and gardens	ha	3 386 354
Wildlife sanctuaries	ha	81 970
Tourist caves	ha	8 454
Marine parks	ha	42 605 725
Total area	ha	72 046 854
Employment at end June 1997		
Full-time	no.	15 035
Part-time	no.	1 611
Total employment	no.	16 646
Volunteers during June 1997	no.	10 679
Income	\$m	1 347
Expenses	\$m	1 120
Industry gross product	\$m	543

Source: Zoos, Parks and Gardens Industry, Australia (8699.0).

## Museums and art museums

Museums are defined by the International Council of Museums as institutions, generally housed in one or more buildings, primarily engaged in the collection, acquisition, conservation and exhibition of the material evidence of people, their culture and environment, for the purpose of education and enjoyment by the general public and/or specialists. Conceptually, museums include art museums and historical theme parks, such as Sovereign Hill, but exclude commercial art galleries as they are regarded as retail outlets. However, in the discussion below and in tables 12.4 and 12.5, museums and art museums have been treated as separate entities, and there is no double counting between them.

While there is no centralised system of administration for Australian museums and art museums, there is a central professional organisation called Museums Australia, based in Melbourne. This organisation is associated with the International Council of Museums. In addition to providing professional advice for its members, Museums Australia provides information about member institutions, including collections and policies. This is an on-line national access program called Australian Museums On Line which has a database of information about 1,000 museums. The site aims to offer access to information about every item held in museums in Australia.

In many cases, State museums and art museums were established many years before their national counterparts. As a result, a number of notable national collections are housed in museums operated by or through State Governments, rather than being housed in the national institutions. The main national museums and art museums are the National Museum of Australia, the Australian National

Maritime Museum, the Australian War Memorial museum, the National Science and Technology Centre (Questacon), the National Gallery of Australia, and the National Portrait Gallery at Old Parliament House in Canberra (operated by the National Library). The last major national survey of museums, conducted in 1993, counted 1,765 museums and art museums operating in Australia at that time.

## Museum and art museum attendance

The ABS conducted a Survey of Attendance at Selected Cultural Venues in March 1995. It revealed that 3.9 million people, or 27.8% of the Australian population aged 15 and over, had visited a museum at least once in the previous 12 months. A total of 3.1 million (or 22.3% of the Australian population aged 15 and over) had visited an art museum.

### 12.4 ATTENDANCE AT MUSEUMS AND ART MUSEUMS—1995

	Museums	Art museums
Attendees	'000	'000
Sex		
Male	1 867	1 318
Female	2 039	1 817
Total	3 910	3 134
Age		
15–24 years	767	628
25–34 years	829	598
35–44 years	939	643
45–54 years	646	591
55–64 years	384	350
65 years and over	342	325
Birthplace		
Australian born	2 951	2 351
Overseas born	955	783

Source: *Attendance at Selected Cultural Venues, March 1995 (4114.0)*.

### 12.5 MUSEUMS, Key Aggregates—1996–97

	Unit	Museums	Art museums	Local government museums/art museums	Historic houses	Total
Organisations at end June 1997	no.	32	102	69	21	224
Locations at end June 1997	no.	32	111	92	117	352
Admissions	'000	4 761.6	8 675.8	1 996.6	1 352.7	16 786.8
Employees at end June 1997	no.	1 230	3 240	444	722	5 636
Volunteers during June 1997	no.	1 654	4 300	1 745	744	8 443
Income	\$m	130.3	234.6	22.0	38.3	425.2
Expenses	\$m	109.4	235.3	19.2	37.8	401.7
Industry gross product	\$m	50.4	123.5	9.7	15.5	199.1

Source: *Libraries and Museums, Australia, 1996–97 (8649.0)*.

## Museums industry

The ABS conducted a survey of museums with paid staff in respect of 1996–97, which found that there were 224 employing organisations providing museum services. These organisations operated from 352 locations (table 12.5). More detailed information from this survey is shown in *Chapter 21, Service industries*.

## Botanic gardens, zoological parks and aquaria

### Botanic gardens

Botanic gardens and arboreta (tree collections) are scientific and cultural institutions established to collect, study, exchange and display plants for research and for the education and enjoyment of the public. Some botanic gardens augment the living botanical displays with a herbarium (a scientific collection of dried preserved plant specimens used for the accurate classification and identification of plant and plant material and for taxonomic studies), and some botanic gardens (those in Adelaide, Melbourne and Sydney) use annexes to extend the range of cultivated plant displays.

There are significant botanic gardens in each capital city, managed by the State or Territory Governments (except for Brisbane, which is municipal, and Canberra, which is Commonwealth). The Commonwealth also manages the Booderee Botanic Gardens at Jervis Bay on behalf of the traditional Aboriginal owners of the land, the Wreck Bay Aboriginal Community Council, under arrangements in place since December 1995. There are a number of smaller regional botanic gardens (about 120), many of which have been created in recent years, often under the auspices of local government.

The Australian National Botanic Gardens occupies a 90 hectare site on the lower slopes of Black Mountain in Canberra. It contains the national collection and one of Australia's most comprehensive displays of living native plants. Officially opened in 1970, in September 1991 it was proclaimed a reserve under the *National Parks and Wildlife Conservation Act 1975*, which provided legal protection for the collections. The Australian National Botanic Gardens maintains 100,000 plants, representing

more than 6,500 taxa—constituting about one-third of the vascular plants recorded for Australia. It receives about 330,000 visitors each year, with peaks in October for the spring flowering and January for the holiday tourist season. It is on the Register of the National Estate in recognition of its importance as a research and teaching-based botanic garden established to display and interpret Australian flora. The Australian National Herbarium, containing the voucher specimens for the living plants in the Gardens, is managed jointly with CSIRO Plant Industry as part of the Centre for Plant Biodiversity Research. It currently houses about one million herbarium specimens.

### Attendance at botanic gardens

The Survey of Attendance at Selected Cultural Venues showed that over 5.4 million people (or 38.5%) of the Australian population aged 15 and over) attended a botanic garden at least once in the 12 months ended 31 March 1995 (table 12.6).

**12.6 ATTENDANCE AT BOTANIC GARDENS, Persons Aged 15 and Over—1995**

Attendees	'000
Sex	
Male	2 459
Female	2 951
Total	5 411
Age	
15–24 years	1 123
25–34 years	1 167
35–44 years	1 125
45–54 years	861
55–64 years	539
65 years and over	596
Birthplace	
Australian born	3 868
Overseas born	1 542

Source: *Attendance at Selected Cultural Venues, March 1995 (4114.0)*.

### Botanic gardens industry

The ABS Survey of Zoos, Parks and Gardens in respect of 1996–97 showed that there were 53 employing organisations operating botanic gardens at the end of June 1997 (table 12.7). The total area of botanic gardens was 2,971 hectares. Some additional data on the botanic gardens industry are shown in *Chapter 21, Service industries*.

### 12.7 BOTANIC GARDENS, Key Aggregates—1996–97

	Unit	
Organisations at end June 1997	no.	53
Locations at end June 1997		
Botanic gardens	no.	64
Arboreta	no.	8
Herbaria	no.	20
Total locations	no.	92
Hectares at end June 1997		
Botanic gardens	ha	2 905
Arboreta	ha	66
Total hectares	ha	2 971
Employment at end June 1997		
Full-time	no.	948
Part-time	no.	182
Total employment	no.	1 129
Income	\$m	82.6
Expenses	\$m	70.2
Industry gross product	\$m	48.2

Source: Zoos, Parks and Gardens Industry, Australia, 1996–97 (8699.0).

### Zoological parks and aquaria

Zoological parks and aquaria (i.e. animal, fauna, bird life, reptile parks; aquaria; aviaries; butterfly houses; dolphinariums) are primarily engaged in the breeding, preservation, study and display of native and/or exotic fauna in captivity, enclosures or natural environments, so as to be accessible to the general public. 'Marine parks' refers to legally declared marine parks such as the Great Barrier Reef Marine Park and the Great Australian Bight Marine Park. These have been created for conservation purposes, and are treated for statistical purposes as part of the natural environment.

Melbourne was the location of the first zoo in Australia, Melbourne Zoo being founded in 1857. There are now zoos and wildlife sanctuaries throughout Australia. As well as the four traditional zoos in Sydney, Melbourne, Adelaide and Perth, there are numerous wildlife parks and sanctuaries, some associated with urban zoos and others privately owned. Some of the better known zoological parks and sanctuaries are Healesville Sanctuary (60 km from Melbourne), the Western Plains Zoo (Dubbo), Victoria Open Range Zoo at Werribee (a Melbourne suburb), The Territory Wildlife Park (Darwin), Monarto Zoological Park (70 km from Adelaide), Lone

Pine Koala Sanctuary (Brisbane) and Currumbin Sanctuary (Gold Coast). The best known aquarium in Australia is Sea World at Surfers Paradise, Queensland.

The Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA) was formally established in 1990 at Auckland Zoo, New Zealand, and was incorporated in Australia in 1991. The Australian regional office is located in New South Wales. ARAZPA is administered by a Board of Management, with committees addressing the region's species management program, ethics, budget and policy review, and animal husbandry. While the association has an increasing number of individual members, there are currently 37 full institutional members, which are zoological parks and aquaria. A key purpose of the association is to promote and maintain professional standards of operation in the zoological industry and to maximise its collective resources for the conservation of biodiversity.

The 1995 Survey of Attendance at Selected Cultural Venues shows that over 4.9 million people (or 35.3% of the Australian population aged 15 and over) visited a zoological park or aquarium during the 12 months ended March 1995 (table 12.8). Of these, 3.1 million (or 22.2% of the Australian population aged 15 and over) visited a zoo at least once during the year.

### 12.8 ATTENDANCE AT ZOOLOGICAL PARKS AND AQUARIA, Persons Aged 15 and Over—1995

Attendees	'000
Sex	
Male	2 270
Female	2 696
Total	4 966
Age	
15–24 years	1 113
25–34 years	1 312
35–44 years	1 132
45–54 years	674
55–64 years	402
65 years and over	333
Birthplace	
Australian born	3 632
Overseas born	1 334

Source: Attendance at Selected Cultural Venues, March 1995 (4114.0).

## Zoos industry

An ABS survey of zoos, parks and gardens in respect of 1996–97 shows that there were almost eight million paid admissions to zoological parks and aquaria. Income from admissions accounted for 49% of total income. Table 12.9 provides details collected from this survey. Additional information on the zoos industry is shown in *Chapter 21, Service industries*.

**12.9 ZOOLOGICAL PARKS AND AQUARIA, Key Aggregates—1996–97**

	Unit	
Organisations at end June 1997		
Zoological gardens	no.	53
Aquaria	no.	12
Total organisations	no.	65
Locations at end June 1997	no.	69
Area of zoos, aquaria at end June 1997	ha	3 631
Employment at end June 1997		
Full-time	no.	1 268
Part-time	no.	677
Total employment	no.	1 946
Volunteers during June 1997	no.	1 591
Paid admissions	'000	7 978.8
Income		
Admissions income	\$m	69.2
Other income	\$m	73.2
Total income	\$m	142.4
Expenses	\$m	126.9
Operating surplus	\$m	16.3
Industry gross product	\$m	74.4

Source: *Zoos, Parks and Gardens Industry, Australia, 1996–97* (8699.0).

collection of printed material published in Australia acquired under the provisions of the *Copyright Act 1968* and, as the national bibliographic centre, it compiles and publishes the Australian National Bibliography.

The Australian Bibliographic Network (ABN), established in 1981, is a computer network among Australian libraries for resource sharing. In January 1998, the Library announced the selection of the AMICUS system, subsequently given the local name Kinetica, to replace the core bibliographical functions of ABN. AMICUS was developed in Canada and has been chosen by the British Library and the National Library of Hungary.

Development of the Library's World Wide Web information server continues in order to make Library collections accessible to the widest possible audience throughout Australia. In the year to June 1998, the Library's Information Server/Home Page was accessed a daily average of over 23,000 times. The Library has also been assessing the extent to which digitising material and making it available through the Library's Home Page can assist in removing geographical barriers. New acquisitions to the Library's Pictorial collection are routinely digitised and made available on Images 1. Almost 17,000 pictorial works are accessible and searchable in this way.

A cooperative venture initiated by the Library has been launched and is available on the Library's Home Page. The Register of Australian Archives and Manuscripts (RAAM) is a guide to some 30,000 collections of personal papers and non-governmental organisational records held by libraries and archives in Australia. It is a centralised register of locations for primary research material and allows researchers with access to the Internet to identify the existence and location of archives and manuscripts.

First established in 1937 as the Australian Institute of Librarians, the Australian Library and Information Association (ALIA) is a major national organisation devoted to promoting quality library and information services, and professionalism of library and information personnel. In 1996, ALIA launched its Aboriginal and Torres Strait Islander recruitment and career development strategy and in 1998 introduced Internet services and training to five remote Aboriginal communities as part of the Government's Open Access Initiative for regional and remote areas. The Association promotes continuing professional education and specific

## Libraries and archives

### Libraries

The National Culture–Leisure Industry Statistical Framework divides libraries into five types: the National and State Libraries, Public Libraries, Special Libraries, Libraries in Higher Education Establishments, and School Libraries. For further details, see *Year Book Australia, 1996*.

In 1960, the National Library of Australia Act gave the statutory title of National Library to the Commonwealth National Library. Today the National Library of Australia provides national leadership and coordination in this field. It is responsible for developing and maintaining the

issues such as community access to information and information literacy. The Association's national headquarters are in Canberra, with a branch in each State and Territory.

In 1997, ALIA and the Australian Council of Libraries and Information Services (ACLIS), the body which dealt with needs of institutions and the support of research and development, agreed to work together to create one organisation to represent the Australian library and information services sector. ALIA has undertaken some of the functions of ACLIS, such as document delivery policy. The new body will be established no later than 1 January 2000.

### Public Lending Right

Public Lending Right (PLR) is a Commonwealth Government program administered by the Department of Communications, Information Technology and the Arts which makes payments to eligible Australian book creators and publishers in recognition that income is lost from the free multiple use of their books in public lending libraries. Australia is one of 15 countries that operate a Public Lending Right program.

The *Public Lending Right Act 1985* provides the legislative framework for the PLR Scheme. A Public Lending Right Committee is appointed by the Minister to administer the Scheme, and the Act provides for the gazettal of a PLR Scheme by the Minister.

Payment is determined by the number of copies of eligible books that are held in public lending libraries. This information is obtained from an annual survey of the books held in a sample of public lending libraries selected by the Australian Bureau of Statistics. If 50 or more copies of an eligible book are estimated to be held in Australian public lending libraries, a payment may be made.

Books are surveyed annually for three consecutive financial years following their year of publication. If, in the third year, a book is still held in sufficient numbers in public lending libraries, it will be resurveyed once every three years. Books scoring less than 50 copies in the third or subsequent surveys are dropped from the survey cycle.

There were 7,788 book creators and their publishers who received PLR payments totalling more than \$4.9m for the 1997–98 program. The PLR rates of payment under the current PLR Scheme are \$1.20 per copy of each eligible book for creators and \$0.30175 per copy of each eligible book for publishers.

### Library attendance

The 1995 Survey of Attendance at Selected Cultural Venues provides data on persons aged 15 years and over who attended a national, State or local library at least once over the 12 month survey period. Table 12.10 shows that more than 5.4 million persons (or 38.4% of the Australian population aged 15 and over) attended one of these libraries at least once during the 12 months ended March 1995.

**12.10 ATTENDANCE AT LIBRARIES(a)—1995**

Attendees	'000
Sex	
Male	2 231
Female	3 172
Total	5 403
Age	
15–24 years	1 219
25–34 years	1 045
35–44 years	1 217
45–54 years	807
55–64 years	470
65 years and over	646
Birthplace	
Australian born	3 983
Overseas born	1 420

(a) National, State or local library only.

Source: *Attendance at Selected Cultural Venues, March 1995 (4114.0)*.

### Libraries industry

An ABS survey of libraries in respect of 1996–97 showed that there were 89.6 million visits to public libraries, which represented nearly five visits per person for the year. These visits resulted in public library loans of 153.9 million books and other materials. Other data collected from the survey are shown in table 12.11. Some additional data on the libraries industry are shown in *Chapter 21, Service industries*.



**12.11 LIBRARIES, Key Aggregates—1996–97**

	Unit	Public libraries	Archival service organisations	Other libraries	Total
Organisations at end June 1997	no.	527	9	28	564
Locations at end June 1997	no.	1 427	11	30	1 468
Employment at end June 1997					
Full-time	no.	5 940	763	266	6 969
Part-time	no.	4 722	122	64	4 908
Total employment	no.	10 662	885	330	11 877
Income	\$m	558.4	80.6	27.7	666.6
Expenses	\$m	529.1	76.8	24.6	630.5
Industry gross product	\$m	343.3	42.8	20.4	406.4

Source: *Libraries and Museums, Australia, 1996–97* (8649.0).

**Reading habits and book buying**

A household survey conducted in February 1995 by the Population Survey Monitor revealed that 87.9% of males and 82.4% of females aged 18 years and over had read a newspaper in the week prior to the survey, and 46.8% of males and 57.8% of females aged 18 years and over had read a book in the week prior to the survey.

An ABS Survey of Aspects of Literacy in 1996, which measured the ability of people aged 15–74 years to use and understand everyday prose and documents (magazine articles, brochures, medicine labels, bus timetables etc.), found that 63.8% of people read newspapers or magazines daily, 33.2% read books daily and 11.1% used a public library at least weekly (Table 12.12).

In all, about 2.6 million people were assessed as having very poor prose skills (Level 1 rating). Of these, 52.7% read newspapers or magazines daily, 21.4% read books daily and 6.3% used a public library at least once a week.

In contrast, 70.4% of the 2.3 million people with good/very good prose literacy (Level 4/5 rating) read newspapers or magazines daily, 47.0% read books daily, and 15.8% used a public library at least weekly. The proportion of people undertaking the latter two activities with the frequency indicated was more than twice as great for people with good/very good skills as it was for people with very poor skills.

See also the article in *Chapter 10, Education*, comparing the results for Australia with those for selected other countries.

**12.12 SELECTED LITERACY-RELATED ACTIVITIES IN DAILY LIFE, By Prose Skill Level**

Skill level(a)	Read newspapers or magazines daily		Read books daily		Wrote material more than one page in length at least weekly		Used a public library at least weekly		Total persons
	'000	%	'000	%	'000	%	'000	%	'000
Level 1	1 373.1	52.7	557.6	21.4	366.9	14.1	164.4	6.3	2 607.4
Level 2	2 310.0	63.6	997.9	27.5	720.7	19.8	323.4	8.9	3 631.9
Level 3	3 124.6	66.9	1 748.6	37.5	1 299.8	27.8	612.4	13.1	4 668.9
Level 4/5	1 627.1	70.4	1 086.7	47.0	856.6	37.0	366.0	15.8	2 312.5
<b>Total</b>	<b>8 434.8</b>	<b>63.8</b>	<b>4 390.7</b>	<b>33.2</b>	<b>3 244.0</b>	<b>24.5</b>	<b>1 466.3</b>	<b>11.1</b>	<b>13 220.8</b>

(a) Level 1—very poor, Level 2—poor, Level 3—average, Level 4/5—good/very good.

Source: *Aspects of Literacy: Assessed Skill Levels, Australia, 1996* (4228.0).

## Book publishing

Data were collected from 214 businesses which employed staff and were predominantly engaged in book publishing in 1995–96. Table 12.13 shows that these organisations generated \$1,256.8m in turnover, of which \$950.0m was from the sales of books. Of total book sales, \$561.1m was attributed to Australian titles.

**12.13 BOOK PUBLISHERS—1995–96**

	Unit	Total businesses
Organisations	no.	214
Sales of all books	\$m	950.0
Sales of other products	\$m	217.2
Total turnover	\$m	1 256.8
Average turnover per business	\$m	5.9
Wages and salaries paid	\$m	201.1
Royalties and fees paid	\$m	69.3
Total costs	\$m	1 132.5
Average costs per business	\$m	5.3
Sales of Australian titles	\$m	561.1
Royalties and fees paid per Australian book sale	%	12.4
Operating profit before tax	\$m	136.8
Profit margin	%	10.9

Source: *Book Publishers, Australia, 1995–96* (1363.0).

## Archives

Archives are institutions whose primary function is the permanent preservation of unique records, selected because of their administrative, financial, legal or other information value. These records are generally no longer required for the conduct of current activities by government agencies, non-government organisations or private individuals. While much archival work is an adjunct to other activity, there is a growing number of archival bodies, funded by governments and private sources, employing specialist staff to serve the legal, administrative and research needs of individuals and organisations.

The National Archives of Australia is the Commonwealth organisation, established by the *Archives Act 1983*, responsible for the broad management of the range of Commonwealth records. Its office is in Canberra and other offices are located in each State and the Northern Territory. It administers the legislative framework for Commonwealth records management (including arrangements for the disposal of records), identifies and documents records, provides appropriate custody and preservation arrangements (including archival storage), and makes records available under the law. Records covered by the Act occur in all formats, from files and index cards through to architectural models and photographs, films and video tapes to optical disks, computer databases, tapes and disks.

The Archives also curates touring exhibitions and produces publications based on its collections.

Some State and Territory archives have been established as separate authorities (New South Wales, Victoria, South Australia, Tasmania and the Northern Territory). Others still operate broadly under State Library control.

In addition, archives have been established by some churches, business corporations, universities and city councils. The Australian War Memorial collects private material concerning Australians at war and is also custodian of certain official Commonwealth records relating to war or warlike operations. The National Film and Sound Archive collects cultural material relevant to the film and sound media. Other corporate and private records continue to be collected by some State archives offices, libraries and universities.

Many of the bodies in the archives or records field are members of the Australian Council of Archives which provides a means of promoting cooperation on issues of common concern.

The National Archives has established a presence on the Internet, the World Wide Web site 'Archives of Australia', which enables all other archives in Australia to place information about themselves and their holdings on the Internet.



**12.14 MUSIC BUSINESSES—1995–96**

	Unit	Record companies and distributors	Manufacturers of recorded music	Music publishers	Sound recording studios	Total
At end of June 1996						
Businesses	no.	153	23	73	292	<b>541</b>
Employment	no.	2 324	493	269	800	<b>3 886</b>
Income	\$m	792.4	95.0	119.9	56.6	<b>1 064.0</b>
Expenses	\$m	751.5	82.2	112.1	48.8	<b>994.6</b>
Net capital expenditure	\$m	24.5	9.7	6.9	6.5	<b>47.5</b>
Operating profit before tax	\$m	48.5	15.5	8.3	7.8	<b>80.1</b>
Profit margin	%	6.1	16.3	6.9	13.8	<b>7.5</b>
Business gross profit	\$m	162.1	46.2	17.2	29.9	<b>255.4</b>

Source: *Business of Music, Australia* (4143.0).

## Music

Music covers all areas of the industry: composition; live performances ranging from the latest pop styles to classical instrumental, vocal and orchestral forms; recording and publishing; studio and concert performances; and the marketing of sheet music.

### Music businesses

The first comprehensive study of Australian music businesses by the ABS shows that in 1995–96 they had an income of \$1,064.0m (table 12.14), about the same size as Australia's book publishing industry. The 541 businesses comprised record companies, distributors, manufacturers of recorded music, music publishers and sound recording studios.

Total employment was 3,886 persons (including working proprietors) with 60% employed by record companies and distributors, 21% by sound recording studios and the remainder by music publishers and manufacturers.

### Attendance at music performances

Attendance at music performances is a significant aspect of the cultural life of Australians. Table 12.15 shows the number of people attending popular and classical music concerts in the

12 months to March 1995. Popular music performances were the best attended, with 3.8 million people (or 26.9% of the Australian population aged 15 and over) attending at least one popular music concert, while 1.1 million (or 7.7% of the Australian population aged 15 and over) attended at least one classical music concert.

**12.15 ATTENDANCE AT MUSIC PERFORMANCES—1995**

Attendees	Popular music concert '000	Classical music concert '000
Sex		
Male	1 861	437
Female	1 930	644
Total	3 791	1 081
Age		
15–24 years	1 216	163
25–34 years	970	181
35–44 years	731	219
45–54 years	497	231
55–64 years	217	141
65 years and over	161	147
Birthplace		
Australian born	2 940	758
Overseas born	851	324

Source: *Attendance at Selected Cultural Venues, March 1995* (4114.0).

**12.16 SYMPHONY ORCHESTRAS, Performances and Total Attendances**

	1995–96		1996–97	
	Number of concerts	Total attendances	Number of concerts	Total attendances
	no.	no.	no.	no.
Type of performance				
Paid orchestral concerts	496	642 006	547	674 423
School concerts	144	106 524	179	102 869
Free concerts	15	188 723	15	232 185
<b>Total</b>	<b>655</b>	<b>937 253</b>	<b>741</b>	<b>1 009 477</b>

Source: Australian Broadcasting Corporation, Annual Report 1995–96.

**Symphony Australia Network**

The Symphony Australia Network comprises Australia's six major professional symphony orchestras—Adelaide Symphony Orchestra, Melbourne Symphony, Queensland Symphony Orchestra, Sydney Symphony Orchestra, Tasmanian Symphony Orchestra and West Australian Symphony Orchestra—and the national service organisation, Symphony Australia. The network was established as a division of the Australian Broadcasting Corporation (ABC) over a number of years from 1932. The orchestras and the national service organisation now operate as subsidiary companies of the ABC. The orchestras present live concerts in Australia's major performing arts venues and free open-air concerts, present broadcasts on ABC radio and television, make recordings for international record labels, accompany opera and ballet performances, undertake international tours, and give performances in regional and country areas

throughout Australia. In 1996–97, the six orchestras presented more than 700 concerts to audiences totalling more than one million people (table 12.16), and reached much larger audiences through their recording and broadcast activities.

**Musica Viva**

Musica Viva is Australia's national chamber music entrepreneur. A non-profit company founded in 1945 with headquarters in Sydney, Musica Viva has a Board with members throughout Australia, a State committee structure and branch offices in capital cities.

During 1997, it presented concerts to over 412,000 patrons in Australia and to an additional 21,000 patrons overseas (table 12.17).

In 1997, planning commenced to bring Musica Viva in Schools to Singapore during 1998, when an estimated 20,000 school students became involved.

**12.17 MUSICA VIVA AUDIENCES(a)**

	1994	1995	1996	1997
	no.	no.	no.	no.
New South Wales	256 715	265 194	288 993	276 889
Victoria	40 220	41 150	41 564	41 929
Queensland	8 681	8 385	6 735	11 118
South Australia	9 853	10 035	19 681	24 209
Western Australia	38 203	32 931	30 161	30 665
Tasmania	9 586	11 567	10 103	8 060
Northern Territory	..	..	..	5 562
Australian Capital Territory	10 266	10 478	14 210	13 919
Australia	373 524	379 740	411 447	412 351
Overseas	71 380	52 000	21 000	20 600
<b>Total</b>	<b>444 904</b>	<b>431 740</b>	<b>432 447</b>	<b>432 951</b>

(a) Includes audiences at regional touring concerts, education concerts, subscription concerts and special events.

Source: Musica Viva.

**12.18 ATTENDANCE AT THE PERFORMING ARTS—1995**

Attendees	Dance performance	Theatre		Other performing arts
		Musical	Other	
	'000	'000	'000	'000
<b>Sex</b>				
Male	515	1 021	906	1 210
Female	892	1 701	1 430	1 425
<i>Total</i>	1 408	2 722	2 336	2 634
<b>Age</b>				
15–24 years	310	531	547	669
25–34 years	278	501	507	707
35–44 years	319	530	480	590
45–54 years	254	544	401	349
55–64 years	121	303	216	169
65 years and over	125	313	186	152
<b>Birthplace</b>				
Australian born	1 030	2 092	1 776	2 074
Overseas born	378	630	561	560

Source: *Attendance at Selected Cultural Venues, Australia, March 1995 (4114.0)*.

## Performing arts

The performing arts concentrate on opera and musical comedy, theatre in its various forms and the various styles of dance, but also include artists working as acrobats, clowns, magicians, comedians, revue artists, poetry readers, and other performing artists.

### Attendance at the performing arts

The popularity of musicals is reflected in attendance numbers at the performing arts. Table 12.18 shows that over 2.7 million people (or 19.3% of the Australian population aged 15 and over) attended at least one performance of musical theatre. Least attended were dance

performances; 1.4 million (or 10% of the Australian population aged 15 and over) attended at least one dance performance in the previous 12 months.

### The Australian Ballet

The Australian Ballet was established in 1961 as the nation's classical ballet company. The company performs in most Australian capital cities every year and occasionally tours overseas. The Australian Ballet has an international reputation as one of the top ballet companies in the world. Table 12.19 shows the number of performances given by the Australian Ballet, and its employment by category, over the years 1992 to 1997.

**12.19 THE AUSTRALIAN BALLET**

	1992	1993	1994	1995	1996	1997
<b>PERFORMANCES</b>						
Theatres in Australia						
New South Wales	80	79	82	81	81	81
Victoria	60	61	60	61	60	62
Queensland	—	9	11	11	10	10
South Australia	10	9	10	7	7	6
Western Australia	9	—	—	6	—	6
Australian Capital Territory	—	10	—	6	6	8
Other venues in Australia						
Open air	—	1	1	1	1	19
ABC-TV simulcasts	—	1	1	2	—	—
Overseas	27	18	14	—	14	—
<b>Total performances</b>	<b>186</b>	<b>188</b>	<b>179</b>	<b>175</b>	<b>179</b>	<b>192</b>
<b>EMPLOYMENT</b>						
Dancers	64	65	65	65	62	62
Staff						
Artistic	8	8	9	9	8	12
Music	4	4	5	5	5	6
Production and theatre	30	27	29	24	25	23
Marketing and publicity	13	15	19	23	23	22
Administration and finance	21	21	20	20	21	19
<b>Total employment</b>	<b>140</b>	<b>140</b>	<b>147</b>	<b>146</b>	<b>144</b>	<b>144</b>

Source: Australian Ballet Foundation, Annual Reports.

## Opera Australia

In late 1996, The Australian Opera merged with the Victoria State Opera (VSO) to form a new company, Opera Australia, which is the largest performing arts organisation in Australia. In 1997, it presented 243 performances to total audiences in excess of 293,000 (table 12.20). Total employees rose slightly from 1,337, reflecting the merger with the VSO. (The figures in table 12.20 for 1994 to 1996 relate solely to the activity of the former Australian Opera.)

A permanent rehearsal and administration home has been purchased in Melbourne which will also serve as the base for OzOpera, the research and development arm.

### 12.20 OPERA AUSTRALIA(a)

	1994	1995	1996	1997
	no.	no.	no.	no.
Employees	1 346	1 280	1 295	1 337
Performances	233	235	249	243
Attendances	302 852	308 561	284 500	293 300

(a) Excludes operations of the Australian Opera and Ballet Orchestra. Excludes Victoria State Opera before 1997.

Source: Opera Australia.

## Film and video

### Film and video production

Australia has a well developed audiovisual production industry which is composed, for the most part, of small specialised companies. They produce programs ranging from feature films to sports coverage, documentaries and television commercials. A relatively small number of companies engage exclusively in film and television drama production. The majority specialise in the production of commissioned programs such as commercials and corporate communications.

The major market for Australian audiovisual producers is the domestic television broadcast industry. Export markets are important mainly for feature films and television dramas, some high-budget documentaries and some commercials.

Private and public television stations produce a large volume of programming—including drama and situation comedy, news and current affairs, light entertainment, 'infotainment' and sketch comedy, sports coverage, and children's programs—at an estimated cost in excess of \$840m.

The film and video production industry comprises businesses mainly engaged in the production of motion pictures on film or video tape for theatre or television projection. Services such as casting, film editing and titling are also included.

Table 12.21 shows the findings of a survey of the film and video production industry conducted by the ABS in respect of 1993–94. At the end of June 1994, there were 1,179 businesses in the film and video production industry. These businesses employed a total of 5,998 persons and generated \$468m from the sales of goods and services, and a further \$121m from the sale of rights for completed works. The industry had a total income of \$608m and expenses of \$706m, resulting in an operating loss of \$98m. An amount of \$463m was spent on the production of films and videos. This consisted of \$184m on productions made for television, \$143m on productions other than for television (including \$87m on feature films), and \$135m on production of commercials and advertisements. During 1993–94, the industry completed or was working on 4,420 productions (the majority of which (3,733) related to corporate/marketing/training videos), and 29 feature films were in production or were completed.

**12.21 FILM AND VIDEO PRODUCTION INDUSTRY, Summary of Operations—1993–94**

	Unit	
Businesses at end June	no.	1 179
Total employment at end June	no.	5 998
Sales of goods and services	\$m	467.7
All other income	\$m	140.1
Total expenses	\$m	705.8
Operating profit before tax	\$m	–98.1

Source: *Film and Video Production and Distribution, 1993–94* (8679.0).

The Commonwealth Government provides assistance and encouragement, through measures such as the investment program of the Australian Film Finance Corporation, the development program of the Australian Film Commission and the Australian content regulations of the Australian Broadcasting Authority, to enable the production of high cost feature films, television dramas and documentaries. Table 12.22 shows the number and value of all Australian titles produced from 1992–93 to 1996–97.

## Film and video distribution

The film and video distribution industry comprises businesses mainly engaged in leasing or wholesaling motion pictures on film or video tape to organisations for exhibition or sale. Agents mainly engaged in leasing and wholesaling films and videos to organisations are also included.

Table 12.23 shows that, at 30 June 1994, there were 69 businesses in the industry, employing 981 people. These businesses generated \$571m from the sales of goods and services, and had an operating profit before tax of \$40m.

During 1993–94, 4,678 Australian titles were distributed worldwide, of which 4,346 were distributed in Australia.

**12.23 FILM AND VIDEO DISTRIBUTION INDUSTRY, Summary of Operations—1993–94**

	Unit	
Businesses at end June	no.	69
Total employment	no.	981
Sales of goods and services	\$m	571.1
All other income	\$m	69.6
Total expenses	\$m	601.1
Operating profit before tax	\$m	39.6

Source: *Film and Video Production and Distribution, Australia, 1993–94* (8679.0).

**12.22 AUSTRALIAN FILM INDUSTRY, Number and Value of Australian Titles(a)**

	1992–93		1993–94		1994–95		1995–96		1996–97	
Type of film	no.	\$m	no.	\$m	no.	\$m	no.	\$m	no.	\$m
Features	24	91	31	210	20	113	31	241	39	249
Mini-series	14	79	4	19	11	54	15	117	10	97
Series and serials	14	69	16	114	18	113	22	103	23	179
Telemovies	10	26	14	24	22	53	18	38	15	36
<b>Total</b>	<b>62</b>	<b>266</b>	<b>65</b>	<b>367</b>	<b>71</b>	<b>333</b>	<b>86</b>	<b>499</b>	<b>87</b>	<b>561</b>

(a) Includes co-productions, foreign titles shot in Australia, and Australian titles shot overseas.

Source: *Australian Film Commission*.

## Motion picture exhibition

The motion picture exhibition industry comprises businesses mainly engaged in screening motion pictures on film or video tape. It also includes businesses mainly engaged in drive-in theatre operation, cinema operation and film or video festival operation.

Some of the findings of a survey on the motion picture exhibition industry, conducted by the ABS in respect of 1996–97, are shown in table 12.24. At the end of June 1997, there were 188 businesses in the industry, employing 7,739 people.

The motion picture exhibition industry had an operating profit before tax of \$120m for 1996–97, which represented an profit margin of almost 15%.

At the end of June 1997, there were 325 cinema sites and 28 drive-in sites in Australia. For 1996–97, the total number of paid admissions for cinemas and drive-ins was 73m (table 12.24). Additional information on the industry is shown in *Chapter 21, Service industries*.

**12.24 MOTION PICTURE EXHIBITION INDUSTRY, Summary of Operations—1996–97**

	Unit	
Number of businesses	no.	188
Total employment	no.	7 739
Paid admissions to cinemas	'000	73 262
Total expenses	\$m	713.2
Gross income	\$m	832.2
Operating profit before tax	\$m	119.9

Source: *Motion Picture Exhibition, Australia, 1996–97* (8654.0).

## Cinema attendance

The March 1995 Survey of Attendance at Selected Cultural Venues provided the first ABS figures for cinema attendances in Australia for persons aged 15 years and over. Over 8.7 million persons (or 62.1% of the Australian population aged 15 and over) attended a hardtop cinema, drive-in or other public screening of a film at least once in the 12 months ending 31 March 1995.

**12.25 ATTENDANCE AT CINEMAS, Persons Aged 15 and Over—1995**

Attendees	'000
Sex	
Male	4 075
Female	4 658
Total	8 734
Age	
15–24 years	2 351
25–34 years	2 051
35–44 years	1 829
45–54 years	1 255
55–64 years	627
65 years and over	620
Birthplace	
Australian born	6 720
Overseas born	2 014

Source: *Attendance at Selected Cultural Venues, March 1995* (4114.0).

## Multimedia

Multimedia is a significant new creative medium. It is a presentation, via an electronic non-linear delivery system, of some combination of media forms such as voice, music, video, photographs, graphics, animation and text. An electronic non-linear delivery system is a combination of hardware and software which gives the user control over the order in which content is accessed.

Until a few years ago, most computer software was aimed primarily at business and education markets. However the household market has grown rapidly in recent years. In 1998, 35.4% (2,401,000) of households in Australia frequently used a computer at home, up 23% from two years earlier. Computer use was more prevalent in households comprising a married couple with children (58.7% of such households) than in other households. Of the households with a computer, 74.2% (1,782,000) used a CD-ROM drive, and 46.6% had a modem or external link. Since 1993 most new computers sold in Australia have been equipped with CD-ROM drives, increasing the market for multimedia products on CD-ROMs.

Developments in new media have made on-line services such as the Internet increasingly easy for people to use. In 1998, nearly 1.3 million persons used a home computer frequently (at least once a week) and accessed the Internet from home.

Internet access by frequent home computer users aged 18 years and over, in March 1998 was highest in the 18-24 years age group at 10.3% of that population, followed by 10.1% in the 25-39 age group. About 25% of the population aged 18 years and over (3.3m adults) accessed the Internet from any site. For more information see the article *The Information Society and the Information Economy* in Chapter 24, *Communications*.

The Department of Communications, Information Technology and the Arts, through multimedia programs such as *Australia on CD* and *Australia's Cultural Network*, has undertaken to promote and provide access to Australia's cultural collections, while forming partnerships with the cultural institutions and multimedia producers involved. The Department has developed ArtsInfo as a single point of access to the Australian cultural sector and has supported the development of the Australian Museums On-Line Internet site.

The *Australia on CD* program is designed to showcase a wide range of Australian cultural endeavour, artistic performance and heritage achievements, and to foster the development of the Australian multimedia industry.

Through the *Australia on CD* program, the Commonwealth Government has funded the production of ten interactive CD-ROMs covering areas such as Australia's prehistory, the environment, the performing and visual arts, sport, science and rock'n'roll. Two copies of each title have been distributed to all Australian primary and secondary schools, public libraries, Austrade offices, overseas missions and members of Parliament.

Australia's Cultural Network is "the on-line gateway to Australia's cultural organisations, resources, activities and events". The Network has two main objectives: to improve and develop on-line access to and participation in Australian cultural endeavour, activities and events; and to improve the prosperity of Australian cultural organisations and cultural workers. This gateway website provides fast access to hundreds of cultural websites nationwide. A national calendar of cultural events is a key feature of the site, with a range of resources to assist Australian cultural industries.

The *Performing Arts Multimedia Library* will involve the creation of a digital library of significant Australian performances, new and existing, across the range of live performance, for use in multiple electronic environments such as the Internet (via Australia's Cultural Network), Pay TV, video and multimedia. The library will be used as a testbed program for government and industry to identify and attempt to resolve the legal, contractual and technical issues associated with the recording and electronic distribution of recorded performances.

Australian Museums On Line (AMOL) began as the National Database Program of the Cultural Minister's Council's Heritage Collections Committee. Initially conceived as an on-line database of objects held in the collections of Australian museums and galleries, the development of the Internet presented an ideal opportunity for a more comprehensive information system, and so the AMOL Internet site was developed.

Since October 1995, the site has averaged well over 60,000 hits per month, currently representing more than 7,000 users. There are now 1,006 museums listed in AMOL's National Directory of Museums, and 60 fully searchable collections in the Museum Search. The site provides access to information about more than 360,000 items held in Australian museums and galleries.

ArtsInfo brings together information on cultural grants, support and industry development programs offered by the three levels of government and their agencies, as well as assistance through corporations, foundations and non-government bodies.

The *ArtsInfo* home page on the Internet provides additional services including the *Smarts* industry magazine on-line, and a resource section containing cultural statistics and references to accredited training courses, an on-line cultural education forum, and industry bulletin boards. *ArtsInfo* includes a cultural business directory showcasing Australia's cultural products and services and a directory of cultural festivals.



## Radio and television broadcasting

Radio and television broadcasting falls within the jurisdiction of the Commonwealth Minister for Communications, Information Technology and the Arts. Commonwealth bodies which are involved include: Telstra, the Australian Broadcasting Corporation (ABC), the Special Broadcasting Service (SBS), the Australian Broadcasting Authority (ABA), the Department of Communications and the Arts, the Australian Telecommunications Authority (AUSTEL), and the Australian Communications Authority (formerly Spectrum Management Agency).

Basically, the Australian broadcasting system comprises the following types of services:

- national radio, television and on-line services broadcasting programs produced by the Australian Broadcasting Corporation and the Special Broadcasting Service;
- commercial radio and television services operated by companies under licence;
- subscription television services;
- community radio services operated by incorporated associations under licence on a non-profit basis; and
- Parliamentary radio service to State capitals, Canberra and Newcastle.

## National Transmission Agency (NTA)

The NTA, which is a part of the Department of Communications, Information Technology and the Arts, is responsible for the design, construction, operation and maintenance of a complex network of transmission facilities used primarily for the transmission of the programs of the ABC and SBS throughout Australia. In regional and remote areas, commercial licensees make extensive use of the NTA's transmission facilities to deliver their services, as do radiocommunications operators.

The Commonwealth Government has announced that it will sell the transmission facilities by open tender, and it is expected that the sale will be completed in the first half of 1999.

## Australian Broadcasting Corporation (ABC)

The ABC has been in existence since 1932 as Australia's only national, non-commercial broadcaster. At 30 June 1998, the ABC provided:

- six distinctly targeted radio networks across Australia on over 6,000 transmitters which include Metropolitan Radio stations in nine cities, Regional Radio with 39 regional stations and 11 smaller studios, Radio National, ABC-FM, and the Triple-J youth radio network;
- a national television service carried on about 600 transmitters;
- Radio Australia, an international radio service broadcast by shortwave to Papua New Guinea and the Pacific and via satellite to the Asia-Pacific regions in English and other languages;
- a 24-hour news and parliamentary broadcast radio service to all capital cities (except Darwin), and to Newcastle;
- an international network of press offices; and
- an on-line service which includes News and program related sites.

The ABC also operates a network of retailing outlets (24 shops and 119 ABC centres) known as ABC Enterprises. Operations include the production of books, classical and contemporary recordings, audio cassettes, videos, multimedia and licensed products, and music and magazine publishing.

As indicated earlier, the ABC has corporatised its symphony orchestras through a new subsidiary company, Symphony Australia (see table 12.16 and accompanying text).

## Special Broadcasting Service (SBS)

The SBS was established by the Commonwealth Government on 1 January 1978. Its principal function is to provide multilingual radio and television services that inform, educate and entertain all Australians and, in doing so, reflect Australia's multicultural society.

SBS Television broadcasts nationally and services areas containing more than 17 million people. In early 1997, coverage was extended to the Albury/Wodonga and Grafton/Coffs Harbour areas, and further extensions in 1998 and



1999 will serve the New South Wales Central Tablelands, Tamworth, Upper Namoi and Rockhampton. SBS Television's programs, gathered from more than 600 international and national sources, are broadcast in more than 100 languages.

SBS Radio, which began in Sydney and Melbourne in 1975, became the world's first national multicultural radio service on 26 January 1994 with the extension of services to Adelaide, Perth, Darwin and Brisbane. By June 1996, when broadcasting began in Hobart, SBS Radio was available in all capital cities and in the regional centres of Wollongong, Newcastle, the Hunter region and Geelong. It broadcasts in 68 languages and operates a national signal and an AM and FM signal in Sydney and Melbourne.

The focus of the Corporation's capital spending has centred on upgrading outdated technology and acquiring digital technology. Delivery of SBS Radio and Television programs continues to be via the Optus satellite system, except for Sydney and Melbourne services. SBS currently uses analogue technology for its satellite program distribution (incorporating 150 television transmitters), but has entered into agreements to convert these to digital during 1998.

## Radio and television operations

### Australian Broadcasting Authority (ABA)

The ABA, established in October 1992 under the *Broadcasting Services Act 1992*, is the broadcasting regulator for radio and television in Australia. As well as planning the availability of segments of the broadcasting services bands (VHF/UHF television, FM and AM radio), the Authority has the power to allocate, renew, suspend and cancel licences and collect any fees payable for those licences.

The ABA is empowered to conduct research into community attitudes on programming matters, develop program standards relating to broadcasting in Australia, assist broadcasting service providers (licensees) develop codes of practice, monitor compliance with licence conditions and investigate complaints about services.

The ABA monitors the suitability of licensees to ensure compliance with ownership and control provisions of the Act. In addition, the ABA is required to inform itself and the Minister about functions and trends in broadcasting technology.

Licenses for commercial television broadcasting services are subject to five year terms, compulsory standards on Australian content and children's television, and a condition that the licensee be a suitable person. Ownership and control limitations also apply. Under these conditions, no person may be in a position to control more than one commercial television licence in a market or control licences with a combined audience reach of more than 75% of the Australian population. Foreign control of commercial television licences is also restricted. Commercial licences may be transferred at will, subject only to notification requirements under the ownership and control rules. Commercial radio broadcasting licences are subject to less restrictive ownership provisions.

Community radio and television are not subject to ownership limitations, and subscription radio broadcasting services and all categories of narrowcasting services are also not subject to ownership limits or suitability requirements.

In 1997–98, the ABA issued one new commercial television licence, six new commercial radio licences, 18 new community radio licences and 194 temporary community broadcasting licences. There was no demand for non-satellite pay TV licences in 1997–98.

The ABA issued 28 transmitter licences for open narrowcasting radio services using a price-based allocation system. The responsibility for issuing low power open narrowcasting services rests with the Australian Communications Authority.

The ABA also issues licences for the broadcast of special events: in 1997–98, 132 special events licences were issued. Also 221 open narrowcasting licences were issued for temporary transmissions by aspirant community broadcasters, making a total of 1,834 issued since October 1992. These have been replaced by temporary community broadcasting system licences.

During 1997–98, the ABA issued, under the *Radiocommunications Act 1992*, 152 apparatus licences for national (ABC and SBS) television and radio services, and it renewed the licences for 36 commercial radio and 128 community radio services, and 18 commercial TV and 80 community TV services.

### Radio and television services—summary of operations

Table 12.26 provides a summary of the operations of private radio and television broadcasters for 1996–97 from an ABS survey. At 30 June 1997, there were 261 private broadcasters in radio services and 48 private broadcasters in television services. Private radio broadcasters employed 5,064 persons, while private television broadcasters employed 8,873 persons. Most of the income of private broadcasters was derived from the sale of airtime. Private radio broadcasters had an operating surplus of \$93m while private television broadcasters had an operating loss of \$324m. The reason for the loss by private television broadcasters was the operations of pay television businesses, which recorded a loss of \$1,058m.

In addition to private broadcasters, there are two public broadcasters of radio and television services. They employed a total of 5,248 persons at the end of June 1997. Their income totalled \$776m in 1996–97, with expenses totalling \$772m.

**12.26 RADIO AND TELEVISION SERVICES,  
Private Broadcasters—1996–97**

	Unit	Radio services	Television services
Businesses at end June	no.	261	48
Employment at end June	no.	5 064	8 873
Sale of air time	\$m	545.8	2 365.0
All other income	\$m	76.9	985.7
Total income	\$m	622.7	3 350.7
Total expenses	\$m	530.1	3 674.6
Operating surplus/loss	\$m	92.6	–324.0
Industry gross product	\$m	342.7	776.1

Source: *Radio and Television Services, Australia, 1996–97* (8680.0).

### Training in the arts

Training in the arts in Australia covers a broad range of resources. Formal training is available through courses in Technical and Further Education institutions, universities and private institutions. A number of on-the-job training programs are also available in the arts and many organisations offer in-house training programs for their staff. The last decade has seen the development, in some States, of multi-disciplinary tertiary institutions providing training in the arts.

CREATE Australia is the national peak advisory body on vocational education and training for the arts, media, entertainment and heritage industries. It is one of a number of Industry Training Advisory Bodies supported by industry and government. CREATE Australia's primary purpose is to promote and enhance the quality and effectiveness of vocational training and education by providing a forum through which industry can express its vocational education and training needs. CREATE Australia's industry coverage encompasses the design, film, television and radio, music, performing arts, visual arts and crafts, museums, libraries, community arts and publishing industries.

A number of national specialised education institutions have been established to provide training in cultural fields. For example, the Australian Film, Television and Radio School is the national training centre for the film and broadcasting industries. The National Institute of Dramatic Art is the national training school for people who wish to enter the profession of theatre, film or television as actors, directors, designers, stage managers, theatre crafts technicians, production managers or teachers of voice and movement. The Australian Ballet School provides full-time training to the highest standard for young Australian dancers seeking a career in the classical dance profession. The Australian National Academy of Music offers master classes and short-term programs which bring distinguished national and international performers and music educators into contact with students.

### Festivals

Festivals have become a major part of Australian life, offering a unique and valuable contribution to our cultural life. Community festivals in regional Australia are increasing both in number and popularity. They range in size from small community celebrations to major cultural events, and feature a variety of themes as diverse as flower arranging, heritage, food and wine, multicultural events, music and the arts.

There are now some 1,300 festivals Australia-wide, ranging from major international events such as the Sydney, Melbourne and Adelaide International Festivals to the more regional and community based events. These festivals provide tangible benefits by giving their communities a creative focus, generating pride in the community and providing economic benefits by attracting tourists to the area.

The last ten years or so have seen the establishment of several new, important arts festivals in Australia. Music festivals constitute the largest group of festivals, almost half of them devoted to jazz. On average, arts festivals attract 20–25% of their audience from outside their local communities. Volunteers play a major role in the organisation and operation of festivals. Even for those festivals with paid staff, the average number of staff employed is quite small.

Table 12.27 reflects the findings of a survey of festivals conducted in 1995 by the Australia Council, and shows that the total government grant, backing small and large arts festivals in Australia, amounted to \$13.3m. Box office and subscription sales for larger arts festivals amounted to \$16.6m, while sponsorships and donations amounted to \$10.7m. Income totalled \$46.9m for larger arts festivals and \$7.6m for smaller arts festivals. The Australia Council defined large festivals as those with expenditure of \$300,000 and above. Using this measure, 31 arts festivals were included in the 'larger' group.

**12.27 OPERATING INCOME AND EXPENDITURE OF ARTS FESTIVALS—1995**

	Larger arts festivals	Smaller arts festivals
	\$m	\$m
Government funding	11.5	1.8
All other income	35.4	5.8
<i>Total income</i>	46.9	7.6
Salaries and fees	17.0	3.0
All other expenditure	28.9	4.6
<i>Total expenditure</i>	45.9	7.6

Source: Australia Council, *Festival Survey 1995*.

Four quarterly surveys from November 1995 to September 1996, of attendance at festivals over the previous 12 months, were conducted by the ABS Population Survey Monitor. Over half of the attendances (2.4 million or 58.7%) were to main arts festivals, followed by popular music festivals (632,000 or 15.4%), art/museum exhibitions (287,000 or 7.0%) and film/video festivals (252,000 or 6.2%). Females were more likely to have attended a festival in the previous 12 months (23.0%) than males (20.8%) (table 12.28).

**12.28 ATTENDANCES AT FESTIVALS(a)(b)—November 1995 to September 1996**

	Attendances		
	Males	Females	Persons
	'000	'000	'000
Main arts festivals	1 101	1 303	2 404
Other festivals			
Art/museum exhibition	138	149	287
Popular music	335	297	632
Classical music	32	31	63
Film/video	115	136	252
Theatre	*17	50	67
Dance	53	35	88
Other performing arts	89	77	166
Craft	*17	24	42
Other	42	50	92
<i>Total other festivals</i>	840	849	1 689
<b>Total attendances</b>	<b>1 941</b>	<b>2 152</b>	<b>4 094</b>
Total number of people attending	1 335	1 518	2 853
	%	%	%
Participation rate(c)	20.8	23.0	21.9

(a) Attendances during the previous 12 months. (b) Includes all people who attended a festival, whether they went to paid or free events. (c) For each group the total number attending expressed as a percentage of the civilian population in that group.

Source: *Attendance at Festivals, Australia, November 1995 to September 1996*, Department of Communications and the Arts.

## Employment and participation in cultural activities

This section contains a selection of ABS statistical data ranging over the whole spectrum of cultural industries and activities. More comprehensive data can be found in the publications listed in the Bibliography.

### Employment in cultural occupations

According to the 1996 Census of Population and Housing, the number of people working in a cultural occupation as their main job was 156,739. Females accounted for 50.1% of these people—this is much higher than their proportion (44.1%) in the employed labour force. Table 12.29 shows that the most common cultural occupations were architects, graphic designers, librarians, library assistants, and music teachers.

**12.29 NUMBER OF PERSONS IN SELECTED CULTURAL OCCUPATIONS—1996**

Occupation group	Males	Females	Total
Media producers	2 863	1 889	<b>4 752</b>
Environment, parks and landcare managers	1 889	447	<b>2 336</b>
Architects	8 290	1 671	<b>9 961</b>
Librarians	1 723	7 843	<b>9 566</b>
Music teachers	2 121	4 992	<b>7 113</b>
Dance teachers	380	2 381	<b>2 761</b>
Painters (visual arts)	1 126	1 288	<b>2 414</b>
Potters and ceramic artists	898	1 257	<b>2 155</b>
Photographers	4 405	1 854	<b>6 259</b>
Fashion designers	499	2 167	<b>2 666</b>
Graphic designers	7 066	6 020	<b>13 086</b>
Interior designers	1 032	1 954	<b>2 986</b>
Editors	1 152	1 094	<b>2 246</b>
Print journalists	3 238	2 585	<b>5 823</b>
Authors	1 216	1 128	<b>2 344</b>
Instrumental musicians	4 208	1 325	<b>5 533</b>
Radio presenters	1 717	415	<b>2 132</b>
Architectural associates	4 164	939	<b>5 103</b>
Library technicians	561	4 940	<b>5 501</b>
Sound technicians	2 550	332	<b>2 882</b>
Library assistants	1 236	7 379	<b>8 615</b>
Ticket collectors and ushers	1 550	1 275	<b>2 825</b>

Source: 1996 Census of Population and Housing.

### Involvement in culture and leisure activities

In March 1997 an ABS survey collected information about the involvement of persons aged 15 and over in selected culture and leisure activities during the previous 12 months. Work in selected culture and leisure activities was defined to include both paid and unpaid involvement, but excluded involvement solely for the respondent's own use or that of their family.

As table 12.30 shows, during the 12 months ended March 1997, 2.2 million people (15.1% of the Australian population aged 15 and over)

were involved in selected culture and leisure activities. Of these persons, 40.2% received some payment.

Many persons were involved in more than one type of activity. There were over 3.7 million involvements, the most popular activities being writing, organising fetes, teaching cultural activities, music, design and performing arts. Most of these involvements were of a short-term and part-time nature, being 13 weeks or less duration and less than 10 hours a week.

**12.30 PERSONS(a) INVOLVED IN CULTURE AND LEISURE ACTIVITIES—12 Months to March 1997**

	Paid involvement only	Unpaid involvement only	Paid and unpaid involvement	Total persons involved	Persons with no involvement	Total persons	Participation rate
	'000	'000	'000	'000	'000	'000	%
<b>MALES</b>							
NSW	61.3	165.7	88.7	315.7	2 094.4	2 410.2	13.1
Vic.	46.4	126.2	58.9	231.5	1 541.4	1 772.9	13.1
Qld	30.7	106.2	50.0	186.9	1 113.3	1 300.2	14.4
SA	14.4	57.1	25.0	96.6	482.1	578.6	16.7
WA	16.0	52.2	26.4	94.6	594.1	688.8	13.7
Tas.	3.4	15.1	9.2	27.7	153.9	181.6	15.3
NT	1.1	4.0	2.2	7.3	44.6	51.9	14.1
ACT	6.2	13.3	9.9	29.3	86.0	115.3	25.4
<i>Aust.</i>	<i>179.5</i>	<i>539.9</i>	<i>270.3</i>	<i>989.6</i>	<i>6 109.8</i>	<i>7 099.4</i>	<i>13.9</i>
<b>FEMALES</b>							
NSW	56.4	231.4	87.3	375.1	2 125.7	2 500.7	15.0
Vic.	36.5	197.1	59.1	292.7	1 558.4	1 851.1	15.8
Qld	24.0	145.4	53.3	222.7	1 106.5	1 329.2	16.8
SA	10.4	74.8	28.3	113.5	485.4	598.9	18.9
WA	17.3	72.8	28.6	118.7	577.6	696.3	17.0
Tas.	2.6	20.9	6.6	30.1	157.7	187.8	16.1
NT	0.8	6.1	3.8	10.6	40.2	50.8	20.9
ACT	3.9	18.9	8.4	31.3	88.2	119.4	26.2
<i>Aust.</i>	<i>151.9</i>	<i>767.4</i>	<i>275.4</i>	<i>1 194.7</i>	<i>6 139.7</i>	<i>7 334.4</i>	<i>16.3</i>
<b>PERSONS</b>							
NSW	117.8	397.1	176.0	690.8	4 220.1	4 910.9	14.1
Vic.	82.8	323.3	118.0	524.2	3 099.8	3 624.0	14.5
Qld	54.7	251.6	103.3	409.5	2 219.8	2 629.4	15.6
SA	24.8	132.0	53.3	210.1	967.5	1 177.5	17.8
WA	33.3	125.0	55.1	213.4	1 171.7	1 385.1	15.4
Tas.	6.0	36.0	15.8	57.9	311.6	369.4	15.7
NT	1.9	10.1	5.9	17.9	84.8	102.7	17.4
ACT	10.1	32.2	18.3	60.6	174.1	234.7	25.8
<b>Aust.</b>	<b>331.4</b>	<b>1 307.2</b>	<b>545.6</b>	<b>2 184.2</b>	<b>12 249.5</b>	<b>14 433.8</b>	<b>15.1</b>

(a) Aged 15 years and over.

Source: *Work In Selected Culture/Leisure Activities, Australia, March 1997 (6281.0)*.

## Government funding for culture

Culture in Australia receives considerable financial support from the Commonwealth Government in the form of direct grants and through the provision of taxation benefits. This support is complemented by State/Territory and local governments.

Total outlays for cultural funding of the Commonwealth Government and State/Territory and local governments for 1996–97 were

\$3,447.5m, the largest funding category being for radio and television broadcasting (\$776.9m) from the Commonwealth. Table 12.31 shows the government outlays on culture for 1996–97.

The largest funding category for State Governments is national parks and wildlife services (\$542.9m in 1996–97). For local governments the largest cultural funding category is libraries and archives (\$415.6m in 1996–97).

## 12.31 CULTURAL FUNDING BY LEVEL OF GOVERNMENT—1996–97

	Level of government			Total
	Commonwealth	State/Territory	Local	
	\$m	\$m	\$m	\$m
Recreational facilities and services				
Public halls and civic centres	—	—	179.4	179.4
National parks and wildlife services	97.9	542.9	2.2	643.0
<i>Total recreational facilities and services</i>	97.9	542.9	181.6	822.4
Cultural facilities and services				
Zoological and botanic gardens	0.9	63.1	16.4	80.4
Libraries and archives	55.4	225.8	415.6	696.8
Literature and publishing	10.2	3.5	0.9	14.5
Museums	54.5	151.3	11.0	216.7
Art galleries	20.0	63.7	39.2	122.9
Visual arts/crafts and photography	15.8	9.9	3.0	28.7
Performing arts venues and arts centres	—	129.0	59.2	188.3
Music (excluding opera)	20.5	16.2	3.5	40.2
Other performing arts	37.9	45.6	6.4	89.9
Cultural heritage	37.8	43.5	8.4	89.8
<i>Total cultural facilities and services</i>	252.9	751.6	563.7	1 568.1
Broadcasting and film				
Radio and television broadcasting	776.9	0.2	0.8	778.0
Film and video	91.9	35.2	0.1	127.1
Multimedia	5.5	0.5	n.a.	6.0
<i>Total broadcasting and film</i>	874.3	35.9	0.9	911.1
Recreation and culture n.e.c.				
Administration of culture	22.1	18.8	23.3	64.2
Community cultural activities	24.4	13.9	12.8	51.1
Other culture n.e.c.	16.7	5.4	8.5	30.6
<i>Total recreation and culture n.e.c.</i>	63.2	38.1	44.6	145.9
<b>Total</b>	<b>1 288.2</b>	<b>1 368.5</b>	<b>790.7</b>	<b>3 447.5</b>

Source: *Cultural Funding in Australia, 1996–97* (4183.0).

## Sport and recreation

The Australian Sports Commission (ASC), with a budget of some \$92 million per year, is responsible for the implementation of the Federal Government's sport policy, including the funding and development of sport, and works closely with State and Territory Governments and national sporting federations. The Commission has three major objectives:

- the development and maintenance of an effective national sports infrastructure;
- improved participation in quality sports activities by Australians; and
- excellence in sports performance by Australians.

Within the ASC, the Australian Institute of Sport (AIS) program is responsible for the development of elite sport on a national basis. For the purposes of elite sport development, the Institute integrates sports science and medical

services, sports management activities and funding, as well as athlete welfare and technical support services.

The AIS employs 76 coaches in 26 sports. In 1998, the Institute had 655 athletes on scholarship around Australia (364 males and 291 females), 250 of whom are based in Canberra. Also in 1997–98, 1,629 athletes received support through the Direct Athlete Support initiative of the Institute.

As in many other countries in the developed world, increasing participation in physical activity throughout the community is becoming a high public health priority. To provide focus on this priority, a national participation strategy called *Active Australia* is being implemented by the ASC, and health, education, local government and industry organisations. This strategy aims for all Australians to be actively involved in sport, community recreation, fitness, outdoor recreation or other physical activities.



The ASC also operates the National Sport Information Centre, which is Australia's premier information resource centre for sport.

### Government funding for recreation and sport

Total net (consolidated) outlays by the three levels of government (Commonwealth, State/Territories and local) on recreation in 1996–97 was \$2,884m. Most expenditure was by general government (\$2,572m, compared with \$326m by public trading enterprises). Of the general government expenditure (before consolidation between sectors), the Commonwealth Government outlay was \$182m, State \$1,335m and local \$1,077m. Of general government expenditure, current outlays were far more significant than capital outlays (\$1,707m compared with \$865m).

The Commonwealth Government provided \$90m in 1997–98 for the Australian Sports Commission's program and administration. This figure included \$20m under the Olympic Athlete Program, which is designed to prepare Australia's athletes for the Sydney 2000 Olympics and Paralympic Games. During 1998, over \$18m was allocated to 112 sports organisations to support activities such as sports management, coaching, officiating, international competition, training camps and participation.

### Sport, recreation and gambling

At the end of June 1995 there were over 11,000 businesses in the sport, recreation and gambling industries, according to a survey conducted by the ABS. These businesses employed 163,000 people and generated income of \$23,000m.

The survey covered employing businesses in a variety of industries associated with sport, recreation and gambling activities. The main results are shown in table 12.32.

There were 5,067 businesses in the sports industries. These businesses employed 58,413 persons and generated \$2,517m in income. There were 112,877 unpaid volunteers, representing 66% of persons working in sports industries.

There were 2,041 businesses in the gambling industries. These businesses employed 32,062 persons and received \$15,511m in income, the major source of income (97%) being the takings and commissions from gambling. Total expenses for the gambling industry were \$14,225m, with 70% of that amount being gambling prize moneys and payouts.

There were 3,284 businesses in the hospitality clubs industry. These businesses employed 62,536 persons and received a total income of \$4,729m.

Of the 119,346 gaming/poker machines in operation in June 1995, 70% were in the hospitality clubs industry, 23% were in pubs, taverns and bars, 6% were in casinos, and the remaining 1% were in other facilities.

Other recreation services, including amusement parks or arcades, sideshows, circuses and agricultural shows, accounted for another 666 businesses. These businesses employed 10,138 persons and a further 3,518 volunteers.

**12.32 SPORT, RECREATION AND GAMBLING INDUSTRIES, Key Aggregates—1994–95**

Industry	Number of businesses(a) no.	Total employment(a) no.	Total income \$m
Horse and dog racing	898	14 118	789.1
Sports grounds and facilities n.e.c.	1 581	21 563	796.3
Sports and services to sports n.e.c.	2 588	22 732	931.6
Lotteries	178	2 006	4 134.4
Casinos	14	15 837	1 650.5
Gambling services n.e.c.	1 849	14 219	9 726.3
Clubs (hospitality)	3 284	62 536	4 729.4
Other recreation services	666	10 138	610.1
<b>Total</b>	<b>11 058</b>	<b>163 149</b>	<b>23 367.7</b>

(a) At 30 June 1995.

Source: *Sports Industries, Australia, 1994–95* (8686.0); *Casinos, Australia, 1996–97* (8683.0).

At 30 June 1997, employment in casinos was 22,508 persons, an increase of 22% (mainly part-time employees) from the previous year. Income for 1996–97 was \$2,308m, an increase of 3% from the previous year. There were 9,408 gaming/poker machines in casinos throughout the country, and 1,171 gaming tables located in casinos at 30 June 1997.

### Involvement in sport

In March 1997, an ABS survey collected information about the involvement of persons aged 15 and over in sport during the previous 12 months, updating the data collected in March 1993. Involvement in sport was defined to include both paid and unpaid participation in playing and non-playing capacities. Spectator involvement in sport was excluded.

The survey found that 4.7 million people, 32.4% of the Australian population aged 15 years and over, were involved in sport, about the same proportion as in March 1993. There were three

million people involved in sport as players, 550,000 as non-players and 1,100,000 as both players and non-players. More men than women were involved as players and as non-players.

Overall, 35.7% of males played sport compared with 21.5% of females, and at all ages a greater proportion of males than females played sport. The older the age group the lower was the percentage player participation (table 12.33).

For those involved in sport solely as non-players, the 35 to 44 years age group had the highest participation rate (7.8% for males, 8.8% for females). Their most common activities were as coaches or committee members.

Of the 4.1 million persons who played sport at some time in the 12 months ended March 1997, 142,600 (3.5%) received payment for their playing involvement (table 12.34). About one in six coaches (16.0%) received payment for their coaching, while 16.5% of umpires received some payment. Only 2.2% of committee members received any payment for their work.

**12.33 PERSONS INVOLVED IN SPORT—March 1997**

	Males		Females	
	All players(a)	Non-players	All players(a)	Non-players
Age group (years)	%	%	%	%
15–24	57.9	1.3	40.0	1.4
25–34	42.7	2.6	25.7	2.8
35–44	32.8	7.8	17.6	8.8
45–54	25.2	6.7	14.3	5.5
55–64	23.2	3.9	14.8	2.0
65 and over	22.2	1.5	12.9	0.3
<b>Total</b>	<b>35.7</b>	<b>4.1</b>	<b>21.5</b>	<b>3.6</b>

(a) All players includes those players who have some non-playing involvement.

Source: *Involvement in Sport, Australia, March 1997* (6285.0).

**12.34 PAID AND UNPAID INVOLVEMENTS IN SPORT—March 1997(a)**

	Involvements			Participation rate
	Paid	Unpaid	Total	
Type of involvement	'000	'000	'000	%
Playing involvements	142.6	3 972.6	4 115.2	28.5
Non-playing involvements				
Coach/instructor/teacher	100.5	527.8	628.3	4.4
Referee/umpire	75.2	381.6	456.8	3.2
Committee member	13.3	592.5	605.8	4.2
Administrator	28.5	237.9	266.5	1.8
Other involvements	28.1	541.8	569.9	3.9

(a) Persons with several types of involvement were counted against each type of involvement.

Source: *Involvement in Sport, Australia, March 1997* (6285.0).



## Participation in sport and recreation

Each year, the ABS Population Survey Monitor (PSM) collects information on the sports and physical activities in which Australians participate. Results from the four quarterly surveys of the PSM are collated to produce annual estimates, with the most recent results published in *Participation in Sport and Physical Activities, Australia, 1996–97* (4177.0).

The survey found that 32.3% of the population (5,576,700 people) aged 5 years and over participated in one or more organised sport and physical activities during the 12 months ending June 1997 (table 12.35). The participation rate for children (61.1%) was considerably higher than that for adults (28.6%).

The highest participation rate was exhibited by children aged 9–11 years (70.4%), and declined with each subsequent age group. Only 16.6% of the population aged 65 and over participated in an organised sport or physical activity.

Males had a higher participation rate than females in every age group, with the difference most evident in the 9–11 and 12–14 age groups. Overall, males had a participation rate of 35.7%, compared with 29.0% for females.

The most popular organised sport or physical activity undertaken during 1996–97 was aerobics. About 565,000 people, or 4.1% of the population

aged 15 years and over, participated in aerobics (table 12.36). Females accounted for over 85% (485,400) of those involved. The second most popular organised sport or physical activity was golf with 450,200 participants, followed by tennis (382,000), netball (325,700) and lawn bowls (272,000).

Participants spent over \$2,762 million on sport and physical activities during 1996–97, an average of \$693 per participant. The main areas of expenditure were clothing and equipment (\$813.9 million), followed by weekly fees (\$570.4 million), membership (\$537.6 million) and transport (\$526.8 million).

The most expensive organised sport or physical activity was motor sports which had an average annual expenditure of \$1,787. Other expensive sports for participants were horse riding (\$1,405), waterskiing/powerboating (\$1,277) and air sports (\$1,259).

As well as organised sport and physical activities, the PSM also collects information on participation in social sports. In 1996–97, swimming was the most popular sport or physical activity not organised through a club, association or school. While swimming was only marginally more popular than weight-lifting and cycling in May 1997, it was clearly the most preferred social activity in the other three quarterly surveys, with over two million participants aged over 18 years in February 1997.

**12.35 PARTICIPATION IN ORGANISED SPORT AND PHYSICAL ACTIVITIES, By Age Group**

Type of film	Males		Females		Persons	
	Number '000	Participation rate %	Number '000	Participation rate %	Number '000	Participation rate %
Age group (years)	—	—	—	—	—	—
5–8	273.6	50.3	240.0	47.1	513.5	48.7
9–11	289.6	76.5	243.1	64.3	532.7	70.4
12–14	298.1	72.9	244.1	64.4	542.2	68.8
<i>Total children</i>	861.3	64.7	727.1	57.4	1 588.4	61.1
15–19	367.9	58.3	306.9	50.7	674.8	54.6
20–24	265.4	39.1	233.1	35.2	498.5	37.2
25–34	482.2	35.0	4 436.2	31.1	918.4	33.1
35–44	437.8	32.2	335.0	24.0	772.7	28.0
45–54	303.3	26.0	190.1	16.6	493.4	21.4
55–64	160.7	21.1	138.3	18.5	299.1	19.8
65 and over	177.7	19.8	153.8	14.0	331.5	16.6
<i>Total adults</i>	2 195.0	31.9	1 793.4	25.4	3 988.3	28.6
<b>Total persons</b>	<b>3 056.3</b>	<b>35.7</b>	<b>2 520.5</b>	<b>29.0</b>	<b>5 576.7</b>	<b>32.3</b>

Source: *Participation in Sport and Physical Activities, 1996–97* (4177.0).

**12.36 MOST POPULAR ORGANISED SPORTS AND PHYSICAL ACTIVITIES(a)—1996–97**

Type of film	Males		Females		Persons	
	Number '000	Participation rate %	Number '000	Participation rate %	Number '000	Participation rate %
Sport and physical activities						
Aerobics	79.8	1.2	485.4	6.9	565.2	4.1
Golf	352.2	5.1	98.0	1.4	450.2	3.2
Tennis	167.1	2.4	214.9	3.0	382.0	2.7
Netball	37.6	0.5	288.1	4.1	325.7	2.3
Lawn bowls	171.3	2.5	100.7	1.4	272.0	2.0
Swimming	103.8	1.5	153.1	2.2	256.9	1.8
Basketball	153.0	2.2	96.5	1.4	249.5	1.8
Cricket (outdoor)	175.8	2.6	10.2	0.1	186.0	1.3
Martial arts	90.3	1.3	74.9	1.1	165.2	1.2
Tenpin bowling	76.5	1.1	84.1	1.2	160.6	1.2

(a) Persons aged 15 years and over.

Source: *Participation in Sport and Physical Activities, 1996–97 (4177.0)*.

## Sports attendance

A survey of sports attendance conducted by the ABS in March 1995 obtained data about the number of people who attended a sporting event as a spectator at least once in the previous 12 months. The survey excluded those under 15 years of age and attendance at junior and school sport.

The survey found that 6.2 million people, 44.3% of the population aged 15 or more, went to a sporting event at least once during the year. Males were the predominant spectators, 3.6 million (51.5% of males) compared with 2.7 million females (37.4% of all females).

Australian rules football attracted the most people across Australia to attend at least one game in the 12 month period. Almost two million (1,874,200) people attended at least one game; of these people nearly 30% (553,300) attended ten games or more.

Horse racing (1.7 million), rugby league (1.5 million) and cricket (1.2 million) follow Australian rules as the sports most attended at least once.

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## Introduction

Australia's economic development has been one of contrast and change. In the early years of settlement, between 1788 and 1820, there was little scope for industrial or commercial enterprises. The government, as both main producer and main consumer, established workshops in order to produce the basic necessities of life—flour, salt, bread, candles, leather and leather articles, blacksmith's products, tools and domestic items.

Between 1820 and 1850, the pastoral industry led Australia's economic development, and by 1850 it was supplying well over 50% of the British market for imported wool. The growth in the wool industry brought great advances in the rest of the economy, with local manufacturing industries being established in response to new market opportunities. Gold surpassed wool as Australia's major export earner throughout the 1850s and 1860s, resulting in a rapid expansion of banking and commerce. Increased public works activity during the 1870s played an important role in encouraging expansion in manufacturing.

From 1901 to 1930 manufacturing expanded further, with impetus from Federation and the elimination of customs barriers between States, and from the First World War. With the onset of the Second World War, the Australian manufacturing sector was sufficiently developed and diversified to respond to the demand for war materials and equipment. Key industries expanded and new ones developed rapidly to produce munitions, ships, aircraft, new kinds of equipment and machinery, chemicals, textiles and so on. After the war, all sectors of the economy experienced growth. The onset of the oil price rises in 1973–74 led the world into recession, and 'stagflation' (inflation coupled with slower growth in Gross Domestic Product (GDP)) affected all sectors of the economy. The modest employment growth between 1968 and 1979 was dominated by the service sector.

The 1980s and 1990s have seen a decline in the relative contribution to GDP from goods-producing industries and a rise in the contribution from service industries. The falling contribution from goods-producing industries is largely the result of a decline in Manufacturing's share of GDP. Of the goods-producing industries, Mining, Manufacturing and Electricity, gas and water have all experienced declining employment.

This chapter presents an overview of the structure and performance of the main industrial sectors of the Australian economy, and their relative contributions to overall economic activity, particularly in terms of production and employment. Statistics are presented at a broad industry level, generally equating to the Division level of the *Australian and New Zealand Standard Industrial Classification* (ANZSIC).

While the statistics presented in this chapter provide the basis for comparisons across industries, care should be taken when making comparisons with data in the industry-specific chapters. Differences in the frequency, scope, statistical units and methodologies of the various ABS collections used to compile the statistics will affect the degree to which comparisons can be made.

Table 13.1 shows each industry's contribution to production and employment in the economy. Tables 13.2 to 13.5 provide more detailed indicators of economic activity by industry over the short and longer term. Each of these tables includes data covering all businesses in the economy. Table 13.6 provides the latest in a selected series of performance indicators for each industry, but its scope excludes non-employed businesses and entities in the general government sector.

This chapter also includes information about the structure of industry, including discussion of the small business sector. An article *Employment generation by the small business sector* concludes the overview of Australian industry.

## Output and employment by industry

Two measures of the changing importance of an industry are its contributions to the production-based measure of gross domestic product (referred to as GDP(P)) and to employment; these are illustrated in table 13.1.

The table shows that, in 1996–97, Manufacturing remained the most significant industry sector in terms of its contribution to GDP. Wholesale trade was the only other industry to contribute over 10% of GDP. Manufacturing was also the second largest employing industry, accounting for 12% of total employment, behind Retail trade at 15%. Another major contributor was the Property and business services industry, ranked third in its contribution to both performance measures.

The table also shows the strength of the service industries in relation to the goods-producing industries. The latter (Agriculture, forestry and fishing; Mining; Manufacturing; Electricity, gas and water and Construction) contributed 31% of GDP, while the service industries contributed

60% (the remainder is attributed to Ownership of dwellings and Import duties, less Imputed bank service charges). Goods-producing industries provided 26% of employment, against 74% provided by the service industries.

Service industries can be grouped to provide another perspective on their relative strengths. For example, the distribution industries (Wholesale trade, Retail trade, Accommodation, cafes and restaurants and Transport and storage) contributed 25% to GDP, while the grouping of communication and business services industries (Communication services, Finance and insurance, and Property and business services) contributed 18%. Other service industries combined (comprising Government administration and defence, Education, Health and community services, Cultural and recreational services and Personal and other services) contributed 17% to GDP.

In terms of these groupings, the distribution industries contributed 31% to total employment, with the communication and business services grouping contributing 16% and the other service industries together contributing 28%.

**13.1 GROSS PRODUCT AND PERSONS EMPLOYED, By Industry—1996–97**

Industry	Industry gross product		Employment(a)	
	Contribution to GDP(P)	no.	Contribution to total employment	
	\$m	(b)%	'000	%
Agriculture, forestry and fishing	18 218	4.0	427	5.2
Mining	19 307	4.3	87	1.0
Manufacturing	61 138	13.6	949	11.5
Electricity, gas and water	14 271	3.2	67	0.8
Construction	28 177	6.3	603	7.3
Wholesale trade	45 974	10.2	492	6.0
Retail trade	31 638	7.0	1 238	15.0
Accommodation, cafes and restaurants	8 281	1.8	399	4.8
Transport and storage	25 334	5.6	389	4.7
Communication services	17 625	3.9	155	1.9
Finance and insurance	26 065	5.8	317	3.8
Property and business services	36 989	8.2	828	10.0
Government administration and defence	15 471	3.4	427	5.2
Education	19 180	4.3	582	7.0
Health and community services	23 465	5.2	772	9.4
Cultural and recreational services	9 141	2.0	192	2.3
Personal and other services	8 238	1.8	317	3.8
Ownership of dwellings	44 124	9.8	—	—
Import duties	5 935	1.3	—	—
Less imputed bank service charge	9 844	2.2	—	—
<b>Total</b>	<b>448 726</b>	<b>100.0</b>	<b>8 456</b>	<b>100.0</b>

(a) Estimates are entirely based on the Labour Force Survey in all industries except for Manufacturing, the estimates for which are based on the annual data from the Censuses of Manufacturing establishments. As a result, the sum of employment in each industry differs from the total shown. (b) Percentage contributions do not sum to 100% due to rounding.

Source: Unpublished data, National Income, Expenditure and Product, 1996–97.



## Profits, wages and output

Table 13.2 presents broadly the profits (referred to as gross operating surplus) of businesses and the wages income of employees for 1996–97, the change over 1995–96, and the average annual rate of growth over the ten years from 1986–87.

The table shows that for many industries gross operating surplus (GOS) fell in 1996–97, with the average for all industries up only 2%. In comparison, the average annual increase in GOS over the ten years to 1996–97 was 7%. The industries performing well in 1996–97 were not always the industries that did so over the longer time period.

The strongest increases in GOS in 1996–97 were recorded by Transport and storage (11%), Personal and other services (8%) and Retail trade (5%). Falls were recorded by Wholesale trade,

Manufacturing, Communication services, Accommodation, cafes and restaurants and Agriculture, forestry and fishing. Over the ten year period to 1996–97, Finance and insurance showed an average annual increase in GOS of 23% (but only a 1% increase in 1996–97), Personal and other services GOS increased by 11% on average (performing strongly over both the long and short-term), and Communication services GOS increased on average by 11% (but experienced a small fall in 1996–97).

The table also shows the growth in Wages, salaries and supplements. (Supplements to wages and salaries consist of employers' contributions to pension and superannuation funds, direct payments of pensions and retiring allowances by employers, and amounts paid as workers' compensation for injuries.)

### 13.2 GROSS OPERATING SURPLUS AND WAGES, SALARIES AND SUPPLEMENTS(a), By Industry

Industry	Gross operating surplus			Wages, salaries and supplements		
	1996–97	Change from 1995–96	Average annual rate of growth 1986–87 to 1996–97	1996–97	Change from 1995–96	Average annual rate of growth 1986–87 to 1996–97
	\$m	%	%	\$m	%	%
Agriculture, forestry and fishing	12 227	–0.1	4.7	3 747	4.0	5.2
Mining	12 736	0.7	5.5	6 059	9.0	4.5
Manufacturing	23 279	–2.6	5.2	40 990	4.9	4.9
Electricity, gas and water	9 991	3.2	5.8	3 373	–1.7	–0.9
Construction	11 430	2.3	5.0	18 034	3.7	5.2
Wholesale trade	8 753	–3.3	4.8	18 005	5.0	6.8
Retail trade	13 000	5.2	6.4	22 234	6.6	7.8
Accommodation, cafes and restaurants	2 969	–0.2	8.1	7 582	7.3	10.0
Transport and storage	14 521	11.3	4.9	11 952	4.7	5.0
Communication services	7 904	–0.8	11.2	5 986	5.2	7.0
Finance and insurance	15 952	0.9	23.3	15 112	7.6	7.8
Property and business services	16 922	2.8	7.3	26 792	13.0	11.6
Government administration and defence	1 707	3.4	4.4	18 267	1.2	6.8
Education	1 885	4.0	4.8	21 540	5.5	6.6
Health and community services	4 677	4.0	6.8	24 272	7.1	7.8
Cultural and recreational services	3 178	2.7	9.0	4 992	11.7	10.1
Personal and other services	2 377	8.0	11.4	8 660	2.3	8.0
<b>All industries</b>	<b>163 508</b>	<b>1.7</b>	<b>6.9</b>	<b>257 597</b>	<b>6.7</b>	<b>6.8</b>

(a) In current prices.

Source: Unpublished data, National Income, Expenditure and Product, 1996–97.

The Property and business services industry showed the largest increase (13%) in wages, salaries and supplements in 1996–97, with an average annual increase of 12% in the ten years to 1996–97. Employment in this industry increased by 4% in 1996–97 (compared with an all industry average increase of 1%), and by an annual average of 6% for the ten years to 1996–97.

Similarly, wages, salaries and supplements in Cultural and recreational services rose by 12% in 1996–97, with an average annual increase of 10% over the ten years to 1996–97. Wages, salaries and supplements in Accommodation, cafes and restaurants increased by 7% in 1996–97, and averaged a 10% annual increase over the ten years to 1996–97. Both these industries also increased employment over the same period at a rate greater than the average for all industries.

Wages, salaries and supplements fell for the Electricity, gas and water industry by 2% in 1996–97, consistent with falls of 1% annually on

average over the ten years to 1996–97. Employment in this industry fell by 2% in 1996–97, and by an average of 7% annually over the ten years to 1996–97.

Table 13.3 shows the growth in each industry's gross product in constant prices, in 1996–97 and over the longer term as an annual average for the ten years 1986–87 to 1996–97.

The two industries growing the most in 1996–97, Agriculture, forestry and fishing and Communication services, also experienced small falls in GOS between those years (of 0.1% and 0.8% respectively), as shown in table 13.2.

The gross product of the Accommodation, cafes and restaurants industry fell by 2% between 1995–96 and 1996–97. Its GOS (in current prices) fell by 0.2% in the same period, but its wages, salaries and supplements increased by 7% (from table 13.2).

### 13.3 GROSS DOMESTIC PRODUCT AT AVERAGE 1989–90 PRICES, By Industry

Industry	1996–97	Change from 1995–96	Average annual rate of growth 1986–87 to 1996–97	
	\$m	%		%
Agriculture, forestry and fishing	18 218	13.7		2.4
Mining	19 307	3.2		4.5
Manufacturing	61 138	1.1		2.0
Electricity, gas and water	14 271	1.5		2.8
Construction	28 177	4.2		2.5
Wholesale trade	45 974	2.4		3.8
Retail trade	31 638	0.9		2.6
Accommodation, cafes and restaurants	8 281	–1.9		3.4
Transport and storage	25 334	1.8		4.1
Communication services	17 625	11.8		10.1
Finance and insurance	26 065	5.8		4.7
Property and business services	36 989	4.1		4.2
Government administration and defence	15 471	–0.5		2.5
Education	19 180	–2.1		2.7
Health and community services	23 465	0.9		3.7
Cultural and recreational services	9 141	2.5		3.1
Personal and other services	8 238	3.0		3.6
Ownership of dwellings	44 124	2.5		3.2
Import duties	5 935	9.4		8.3
Less imputed bank service charge	9 844	5.6		4.8
<b>All industries (GDP(P))</b>	<b>448 726</b>	<b>2.9</b>		<b>3.4</b>

Source: Unpublished data, National Income, Expenditure and Product, 1996–97.

## Changes in employment by industry

Table 13.4 shows that, over the past ten years, employment has been declining in the goods-producing industries as a group. The slight rises in employment in the Agriculture, forestry and fishing and Construction industries over this period are overshadowed by the declines in the other goods-producing industries, in particular the 7% average annual fall in employment in the Electricity, gas and water industry. These reductions in employment should be considered in the context of the corresponding increases in labour productivity achieved by some industries, most notably, Electricity, gas and water. This issue is discussed in greater depth in the next section *Changes in labour productivity*.

Employment also fell in some service industries, for example in Wholesale trade, which experienced a fall in employment in 1996–97, and growth on average by only 1% over the ten years to 1996–97. Government administration and defence also experienced a fall in employment (of 2%) in 1996–97. The average annual rate of employment growth in this industry over the ten years to 1996–97 has been modest, at 0.6%.

It is interesting to compare the growth in employment with the growth in wages, salaries and supplements over the same period. In the goods-producing industries, employment fell by 0.6% over the ten years to 1996–97. However, wages, salaries and supplements for this industry grew at an annual rate of 5%, below the average for all industries (of 7%).

Employment in the distribution industries group increased by 2% on average over the decade, while wages, salaries and supplements increased by 7%. Employment in the communication and business services group grew on average by 4% per year over the decade to 1996–97, and wages, salaries and supplements grew on average by 10%. In the other service industries, employment grew on average by 2% per year over the ten years to 1996–97, and wages, salaries and supplements grew on average by 7%.

In evaluating changes in employment, it is important to recognise that industry restructuring, outsourcing of some functions and contract employment have impacted more substantially on some industries than others. More detail on employment changes over time is included in *Chapter 6, Labour*.

### 13.4 PERSONS EMPLOYED, By Industry

Industry	1996–97	Change from 1995–96	Average annual rate of growth 1986–87 to 1996–97	
	'000	%		%
Agriculture, forestry and fishing	427	1.2		0.1
Mining	87	2.3		–0.1
Manufacturing	949	1.6		–1.2
Electricity, gas and water	67	–1.7		–7.0
Construction	603	–2.1		1.4
Wholesale trade	492	–1.4		1.3
Retail trade	1 238	0.9		2.4
Accommodation, cafes and restaurants	399	4.2		4.9
Transport and storage	389	2.0		0.6
Communication services	155	4.0		1.2
Finance and insurance	317	0.3		0.3
Property and business services	828	4.0		5.6
Government administration and defence	427	–2.0		0.6
Education	582	0.5		2.0
Health and community services	772	2.0		2.8
Cultural and recreational services	192	2.1		3.8
Personal and other services	317	0.6		2.9
<b>All industries(a)</b>	<b>8 456</b>	<b>1.2</b>		<b>1.7</b>

(a) Estimates for industries other than Manufacturing are based on the Labour Force Survey; for Manufacturing estimates are based on annual Manufacturing industry collections. Therefore the sum of employment in each industry differs from the total shown.

Source: *Unpublished data, National Income, Expenditure and Product, 1996–97.*

## Changes in labour productivity

Changes in the number of hours worked provide another indicator of the level of economic activity of an industry. A developing or buoyant industry will generally show an increase in the number of hours worked over time. However, factors such as the improved productivity of labour within an industry may result in changes in hours worked relative to output. A general indication of such effects is provided in table 13.5, which shows the changes in labour productivity (defined as gross product per hour worked) experienced by each industry between 1995–96 and 1996–97, as well as the rate of change for the ten years to 1996–97. While proportions of GDP, as shown in table 13.1, are best calculated using data valued in current prices, labour productivity (output per unit of labour input), is best measured in constant price terms, in this case, at average 1989–90 prices.

The average increase in labour productivity across all industries between 1995–96 and 1996–97 was 2%; over the ten years to 1996–97 the average annual increase was 2%.

As indicated in the table, Accommodation, cafes and restaurants experienced a reduction in labour productivity in 1996–97, which was consistent with an average fall of 1% over the

ten years to 1996–97. Labour productivity declined for this industry because growth in employment outstripped growth in gross product per hour worked.

Similarly, labour productivity in the Cultural and recreational services industry fell on average by 0.4% over the ten years to 1996–97. The industry's gross product per hour worked increased on average by 3% over the same period, while average employment growth was 4%.

At the other end of the scale, the Communication services industry achieved an average annual increase in labour productivity of 8%. Similarly, labour productivity in the Electricity, gas and water industry increased on average by 9% per year over the ten years to 1996–97 (including 23% in 1996–97); this industry's average increase in gross product per hour worked over the same period was 4%, and employment fell by an annual average of 1% over the period.

These measures of labour productivity should be treated with care. Changes in the composition of labour, which are not captured in the hours worked measure, can affect output, which can also be affected by changes in inputs other than labour (e.g. capital). Finally, the extent to which the capacity of inputs is utilised can affect output; for example, there will be an apparent increase in productivity when an input that was previously not fully utilised becomes fully utilised.

**13.5 INDEXES OF GROSS PRODUCT PER HOUR WORKED, By Industry(a)(b)**

Industry	1996–97	Change from 1995–96	Average annual rate of growth 1986–87 to 1996–97
	Index number	%	%
Agriculture, forestry and fishing	124.0	10.2	2.5
Mining	140.3	3.4	4.6
Manufacturing	121.3	-0.2	2.8
Electricity, gas and water	181.3	23.4	9.3
Construction	108.1	5.1	0.7
Wholesale trade	123.2	6.0	2.5
Retail trade	109.9	1.4	0.7
Accommodation, cafes and restaurants	92.8	-5.4	-1.0
Transport and storage	124.0	1.6	2.9
Communication services	167.4	7.6	8.0
Finance and insurance	141.0	6.3	4.0
Property and business services	n.a.	n.a.	n.a.
Government administration and defence	n.a.	n.a.	n.a.
Education	n.a.	n.a.	n.a.
Health and community services	n.a.	n.a.	n.a.
Cultural and recreational services	102.9	-0.1	-0.4
Personal and other services	n.a.	n.a.	n.a.
<b>All industries</b>	<b>113.6</b>	<b>2.2</b>	<b>1.6</b>

(a) 1989–90 = 100. (b) Estimates of gross product per hour worked are not presented for five industries: Property and business services; Government administration and defence; Education; Health and community services; and Personal and other services, because the estimates of gross product at average 1989–90 prices are derived with a methodology which uses input data as indicators of output.

Source: *Unpublished data, National Income, Expenditure and Product, 1996–97.*

## Industry performance

The relative performance of industries, like the relative performance of businesses, can be analysed using a combination of quantitative estimates (of the kind shown in earlier tables) and performance ratios. Various ratios commonly used in financial analysis are included in table 13.6. These show, for example, that in 1996–97:

- industries which converted the highest proportion of their sales into profit (as represented by the profit margin) were Finance and insurance, and Mining;
- businesses in Private community services, Retail trade, Personal and other services and Construction reported, on average, the highest return on assets;
- industries with the greatest ability to cover long term debt with total assets (represented by the long-term debt to equity ratio) were Agriculture, forestry and fishing, and Personal and other services; and

- the greatest ability to service debt charges from profits (as represented by the interest coverage ratio) was recorded for Private community services and Personal and other services.

The derivations of the performance ratios shown in table 13.6 are as follows:

- Profit margin is operating profit before tax as a percentage of sales of goods and services plus interest income plus other operating income;
- Return on assets is operating profit before tax as a percentage of total assets;
- Long-term debt to equity is the number of times that non-current liabilities exceed net worth;
- Interest coverage is the number of times that businesses can meet their interest expenses from their earnings before interest and tax; and
- Investment rate is the proportion of industry gross product used for capital investment.

## 13.6 INDUSTRY PERFORMANCE RATIOS(a)—1996–97

Industry	Profit margin %	Return on assets %	Long-term debt to equity times	Interest coverage times	Investment rate %
Agriculture, forestry and fishing	10.3	2.3	0.1	2.7	63.1
Mining	16.3	7.9	n.a.	n.a.	n.a.
Manufacturing	6.9	8.2	0.5	5.0	18.9
Electricity, gas and water	11.0	2.8	n.a.	n.a.	n.a.
Construction	4.3	9.1	1.0	4.3	10.2
Wholesale trade	3.1	7.7	0.4	4.2	12.3
Retail trade	2.8	10.4	0.7	3.8	12.7
Accommodation, cafes and restaurants	6.8	6.1	0.7	3.3	28.7
Transport and storage	2.8	2.3	0.7	1.9	27.3
Communication services	7.9	5.0	0.6	3.5	89.3
Finance and insurance	32.0	3.2	..	2.0	..
Property and business services	12.4	5.8	0.7	3.0	15.5
Private community services(b)	11.1	13.1	0.5	9.2	14.6
Cultural and recreational services	4.3	3.0	0.8	2.6	88.1
Personal and other services	12.2	9.5	0.2	8.3	17.1
<b>All industries(c)</b>	<b>9.0</b>	<b>4.5</b>	<b>0.3</b>	<b>2.6</b>	<b>24.9</b>

(a) The underlying data include private employing and public trading businesses, but exclude non-employing businesses and entities in the general government sector. (b) Includes private education, health services and community services businesses, but excludes those in the public sector. (c) Long-term debt to equity and Investment rate for All industries exclude Mining, Electricity, gas and water and Finance and insurance businesses. Interest coverage for All industries also excludes Mining and Electricity, gas and water.

Source: *Business Operations and Industry Performance, Preliminary (8142.0)*.

## Number of businesses and employment by size of business

This section outlines the growth in the number of Australian businesses, and in their employment, by employment size group, in 1996–97 and over the ten years to 1996–97. The analysis and tables cover businesses other than government enterprises and businesses classified to the Agriculture, forestry and fishing industries.

Table 13.7 shows details of the change in the number of businesses by employment size group, while table 13.8 shows the change in employment across the different employment size categories.

The tables show that in 1996–97 there were almost 930,000 non-agricultural private sector businesses operating in Australia, employing almost 6.5 million people. Over the decade to 1996–97, the total number of businesses increased by an average of 3.2% per year, while the total number of persons employed grew at 2.7% per year. By comparison, over 1996–97 the number of businesses did not change, but the number of persons employed increased by 3.9%.

The average annual rate of growth in numbers of businesses over the ten year period was fairly similar across the different size categories, the notable exception being businesses with 1–9 employees, which recorded an average growth in numbers of 4.5% per year. Other categories ranged from 2.1% to 2.3% per year. Change over 1996–97 was more variable, with sharp falls in the number of non-employing businesses (of 4.5%) as well as in those with 10–19 and 20–99 employees (of 3.6% and 3.0% respectively). By contrast, strong growth was recorded in the number of businesses with 1–9 and 100 or more employees (of 5.2% and 5.4% respectively).

Change in the number of persons employed across the employment size categories generally reflected the change in numbers of businesses, with the 1–9 size group recording the strongest average annual growth rate (of 4.5%) over the ten years to 1996–97. There was virtually no growth on average in the number of working proprietors and partners operating unincorporated employing businesses over the same period. Over 1996–97, there was a sharp decline in both categories of persons working in their own business, with the number of own account workers falling by 4.5% and employers by 6.8%.

**13.7 NUMBER OF BUSINESSES(a), By Employment Category of Business**

	1996-97	Change from 1995-96	Average annual rate of growth 1986-87 to 1996-97
	'000	%	%
Employment category			
Non-employing businesses	409.1	-4.5	2.1
1-9 employees	439.3	5.2	4.5
10-19 employees	46.1	-3.6	2.3
20-99 employees	29.1	-3.0	2.1
100 or more employees	5.9	5.4	2.3
<b>Total</b>	<b>929.5</b>	<b>0.0</b>	<b>3.2</b>

(a) Excludes public trading and general government entities, and businesses in the Agriculture, fishing and forestry industries.

Source: *Unpublished data, Survey of Employment and Earnings*; *unpublished data, Labour Force Survey*.

**13.8 PERSONS EMPLOYED(a), By Employment Category of Business**

	1996-97	Change from 1995-96	Average annual rate of growth 1986-87 to 1996-97
	'000	%	%
Persons working in their own business			
Own account workers	640.8	-4.5	2.6
Working proprietors and partners in employing businesses	291.6	-6.8	-0.0
Employees			
Employees in businesses employing 1-9 persons	1 438.8	7.7	4.3
Employees in businesses employing 10-19 persons	651.4	1.0	2.7
Employees in businesses employing 20-99 persons	1 253.8	3.5	2.9
Employees in businesses employing 100 or more persons	2 194.2	3.0	2.0
<i>Total employees</i>	<i>5 538.2</i>	<i>4.1</i>	<i>2.8</i>
<b>Total persons employed</b>	<b>6 470.6</b>	<b>3.9</b>	<b>2.7</b>

(a) Excludes persons employed by public trading and general government entities, and by businesses in the Agriculture, fishing and forestry industries.

Source: *Unpublished data, Survey of Employment and Earnings*; *unpublished data, Labour Force Survey*.

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*Australian National Accounts: National Income, Expenditure and Product, Main Tables 1996–97* (5204.0.40.002).

*Business Operations and Industry Performance, Preliminary* (8142.0).



# Employment generation by the small business sector

## Introduction

This article looks at the contribution of the small business sector to employment growth and employment generation in Australia. These issues have attracted considerable debate in Australia and internationally over the years. They are generally analysed by using either point-in-time estimates or data longitudinally linked at the level of the individual business. The article first presents an analysis of employment in Australia using a point-in-time series, then considers the early results from the ABS's longitudinal survey of Australian businesses. The longitudinal analysis supports some further insights into employment change in Australia.

## Measuring employment levels in Australia

Total employment growth in Australia is usually measured using results from the monthly Labour Force Survey (LFS), a survey of households which covers all types of employment across all industries. However, the survey does not easily lend itself to disaggregation by size of business, and any analysis by industry is subject to error from the subjective classification of businesses to an industry based on a description of the activity of the business provided by the householder.

In the early 1980s, the ABS commenced the Survey of Employment and Earnings (SEE), a survey of businesses measuring both wages and salaries, and number of employees. This survey enables the derivation of estimates of the number of employees classified by business size and industry, with more accurate industry codes derived from the ABS Business Register. However, the estimates only refer to employees, not total employment, and exclude working proprietors and partners of incorporated businesses. While the SEE covers all businesses in all industries other than Agriculture, forestry and fishing, the analysis in this article is restricted to private sector businesses.

To obtain an estimate of total employment by business size, the results from the SEE need to be combined with estimates from the LFS of persons working in their own business as proprietors or partners. The percentage contribution to total employment can then be estimated for the small business sector, as well as for the medium and large business sectors.

Previous studies of employment growth in Australia have generally used these same data sources. The most recent of these was a Staff Research Paper of the (then) Industry Commission (Revesz and Lattimore 1997). The present article, in summarising the point-in-time analysis, updates the Revesz and Lattimore (1997) paper by extending the series up to 1996–97 and using revised SEE data subsequently published by the ABS.

Studies of the type described above, using point-in-time estimates, have been criticised in recent years because the results may be severely impacted by firms changing size categories across the observation period. To overcome this, a number of researchers have used datasets linked longitudinally at the level of the individual business. Picot, Baldwin and Dupuy (1995), Davis and Haltiwanger (1990, 1992) and Davis, Haltiwanger and Schuh (1993, 1996) have conducted studies of employment growth using linked datasets for their own countries. In Australia there have also been attempts to overcome the same problems, either using linked ABS Manufacturing Census data (Hemmings 1991, and Borland and Home 1994) or data from the Australian Workplace Industrial Relations Survey (Mumford and Smith 1997).

To further examine these issues in Australia, this article presents some preliminary analysis using the results from a longitudinal survey (BGAPS) being developed by the ABS on behalf of the Office of Small Business (now located in the Department of Employment, Workplace Relations and Small Business). This survey was started in respect of 1994–95 and is scheduled to run for five years.

## Differences across surveys

The analyses presented highlight some of the difficulties associated with comparing results from different surveys. When data are drawn from different sources, users must be aware of any differences in the scope and coverage of the surveys underlying the analysis. In this article, data are drawn from a number of ABS surveys, including the LFS, the SEE and the BGAPS.

The LFS provides a complete measure of employment in Australia, for both private and public sectors and across all industries. It covers employees and people working in their own business. As each person is only counted once, in their main job, the issue of multiple job holding is avoided. SEE, on the other hand only covers employees, but is subject to the double counting of people who have more than one job as an employee. BGAPS covers only private sector employment and also excludes a number of industries.

The differences in scope, as well as some of coverage, largely explain the discrepancies that appear in the estimates from these surveys. If SEE and LFS estimates are adjusted to the industry scope of BGAPS, SEE and BGAPS give similar aggregate results and the LFS estimates are slightly higher. The fact that the estimates of number of employees from SEE are lower than those from the LFS has been raised on a number of occasions. The differences are likely to stem from errors in both surveys and are a symptom of the changing nature of employment in Australia. Factors which may explain the remaining discrepancies include the omission of some owner managers of limited liability companies in the SEE and the misclassification of some subcontractors and consultants in the LFS.

## Change in small business employment between 1983–84 and 1996–97

Table S4.1 shows private sector employment for small businesses (Non-manufacturing businesses employing less than 20 people and Manufacturing businesses employing less than 100 people) and for other businesses (businesses other than small) for the period 1983–84 and 1996–97, along with the average annual rate of growth over that period.

The average annual growth in employment in the small business sector was 3.2% over the 13 year period from 1983–84 to 1996–97, slightly higher than the growth rate for other businesses (3.0%). Consequently, the contribution of the small business sector to total private sector employment changed very little over the period, rising from 49.7% to 50.2%.

Small business employment can be dissected into people working in their own business and employees. For this purpose, people working in their own business include (sole) proprietors and partners of unincorporated businesses. (Working directors of incorporated companies are generally classified as employees.)

This analysis gives a slightly different picture. Over the 13 year period, the annual growth rate of people working in their own business (2.1%) was significantly less than the annual growth rate of small business employees (3.6%).

**S4.1 EMPLOYMENT, By Business Size Category**

	Persons working in own business(a)	Employees of small businesses	Total small business employment	Employees of other businesses	Total employment(b)	Small business employment
	'000	'000	'000	'000	'000	%
1983–84	718.8	1 452.7	2 163.5	2 192.0	4 355.5	49.7
1996–97	932.4	2 314.9	3 247.3	3 223.3	6 470.6	50.2
	%	%	%	%	%	%
Annual average rate of change	2.1	3.6	3.2	3.0	3.1	n.a.

(a) Includes working proprietors and partners of unincorporated employing and non-employing businesses; working directors of incorporated businesses are usually classified as employees. (b) Excludes persons employed in public trading and general government entities, and by businesses in the Agriculture, fishing and forestry industries.

Source: Unpublished data, Survey of Employment and Earnings; unpublished data, Labour Force Survey.

**S4.2 AVERAGE ANNUAL RATE OF CHANGE IN EMPLOYMENT—1983–84 to 1996–97**

Industry	Persons working in own business(a)	Employees of small businesses	Total small business employment	Employees of other businesses	Total employment
	%	%	%	%	%
Mining	5.5	2.0	2.9	0.7	0.9
Manufacturing	3.0	2.0	2.2	-1.7	0.1
Construction	2.7	5.7	4.1	2.1	3.6
Wholesale trade	-0.5	3.0	2.3	2.5	2.4
Retail trade	-0.1	2.8	1.8	3.6	2.6
Accommodation, cafes and restaurants	3.5	2.7	2.9	4.8	3.9
Transport and storage	0.8	5.1	3.0	4.7	3.8
Finance and insurance	-0.4	3.3	2.4	4.7	4.3
Property and business services	5.3	5.9	5.7	5.1	5.5
Education	5.2	7.4	6.7	8.6	8.0
Health and community services	3.9	7.7	6.9	7.2	7.1
Cultural and recreational services	3.4	2.3	2.7	5.2	3.9
Personal and other services	2.9	4.2	3.6	5.6	4.2
<b>Total</b>	<b>2.1</b>	<b>3.6</b>	<b>3.2</b>	<b>3.0</b>	<b>3.1</b>

(a) Includes working proprietors and partners of unincorporated employing and non-employing businesses; working directors of incorporated businesses are usually classified as employees.

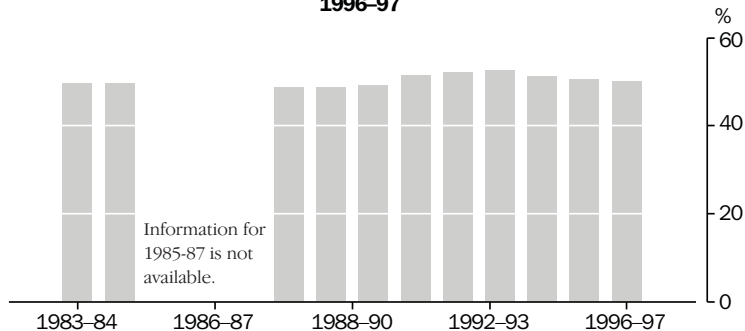
Source: Unpublished data, Survey of Employment and Earnings; unpublished data, Labour Force Survey.

It is also possible to analyse the employment change for the different business size categories by looking at individual industries. Table S4.2 shows data for the same time periods classified by industry divisions of the Australian and New Zealand Standard Industrial Classification (ANZSIC).

Although the overall growth in employment in small and other sized businesses between 1983–84 and 1996–97 was almost the same, there are some observable differences at the industry level and, within the small business category,

between employees and people working in their own business.

Looking only at the end points of a time series can disguise changes that have occurred within the time period. Examining the small business share of total employment over the period 1983–84 to 1996–97 shows there was a steady growth in the small business share of total employment through the late 1980s up until 1993–94. Thereafter there was a fairly rapid decline, so that by 1996–97 the share was almost back to 1983–84 levels (graph S4.3).

**S4.3 SMALL BUSINESS SHARE OF TOTAL EMPLOYMENT—1983–84 to 1996–97**

Source: Unpublished data, Survey of Employment and Earnings; unpublished data, Labour Force Survey.

## Change in small business employment between 1993–94 and 1996–97

The decline which occurred since 1993–94 is illustrated in table S4.4.

The overall growth rate of private sector employment was 5.2% per annum, with the small business sector growing by 3.6% and the other business sector growing by 7.0%. It is worth noting that this overall rate of growth in employment appears to be much larger than for the total employment estimate derived from the LFS. This difference is discussed earlier in this article. The main reason for it is that the scope of this analysis relates only to private sector employment, and there has been a substantial change in proportions between private and public sectors over this period.

The growth in total small business employment (3.6%) over the period 1993–94 to 1996–97 continued at a little above the long term average of 3.2% (from table S4.1). This was achieved solely through a significant increase in the

number of small business employees over the period. Growth in small business employees averaged 5.3% per year, well above the longer term rate of 3.6%. By contrast, the growth in persons working in their own business was slightly negative at –0.3% per annum.

The major reason for the shift in share of employment from the small business sector to the larger business sector was the stronger growth in employment in the larger businesses. Over the three years 1993–94 to 1996–97, employment levels in businesses other than small businesses have grown at 7.0% per annum, more than twice the rate recorded over the 13 year period to 1996–97.

In summary, the fall in the small business share of total employment over the three years to 1996–97 can be attributed to two main factors: a decline in growth of people working in their own business, and much stronger growth in the number of people working in larger businesses.

Examining the data at the industry level would provide further insight into the shift in employment patterns.

**S4.4 AVERAGE ANNUAL RATE OF CHANGE IN EMPLOYMENT—1993–94 to 1996–97**

Industry	Persons working in own business(a)	Employees of small businesses	Total small business employment	Employment of other businesses	Total employment
	%	%	%	%	%
Mining	–23.9	8.9	–6.3	12.7	10.0
Manufacturing	1.8	3.2	3.0	0.4	1.7
Construction	–1.8	8.5	3.0	11.8	4.6
Wholesale trade	–5.4	1.4	0.1	4.1	2.2
Retail trade	–0.4	10.4	6.6	7.0	6.8
Accommodation, cafes and restaurants	2.3	3.3	3.1	6.0	4.7
Transport and storage	–3.2	1.9	–0.4	13.9	5.9
Finance and insurance	–7.9	–3.3	–4.3	8.3	5.5
Property and business services	4.2	7.0	6.2	8.7	7.2
Education	–1.9	9.5	5.6	21.2	16.1
Health and community services	8.1	13.0	12.0	14.4	13.5
Cultural and recreational services	2.0	1.1	1.5	6.2	3.8
Personal and other services	0.3	5.1	3.0	9.5	4.9
<b>Total</b>	<b>–0.3</b>	<b>5.3</b>	<b>3.6</b>	<b>7.0</b>	<b>5.2</b>

(a) Includes working proprietors and partners of unincorporated employing and non-employing businesses; working directors of incorporated businesses are usually classified as employees.

Source: *Unpublished data, Survey of Employment and Earnings; unpublished data, Labour Force Survey.*

## Longitudinal analysis

The above analysis discusses employment change in Australia at the macro level, examining net employment change by business size and industry across different time periods. However, researchers have been aware for some time that such broad analysis may hide many underlying factors which are very important for policy purposes. For example, decomposing the net employment change into its various components enables an analysis of the following:

- gross job generation and gross job destruction, and their components;
- the extent to which job generation and destruction are widespread among firms or concentrated in a relatively small number of firms; and
- the extent to which jobs generated, or destroyed, in any one period are maintained in subsequent time periods.

To address these and other issues relating to the growth and performance of Australian businesses, particularly small businesses, the ABS established BGAPS, in conjunction with the Office of Small Business. The survey is planned to run for five years, commencing in respect of 1994–95. Survey data are now available for three years (1994–95, 1995–96 and 1996–97).

The survey has provided data to allow some of the above issues to be analysed, but there is not yet a sufficient time series to support a comprehensive analysis. The ABS has done some analyses of the survey results, and these have been published in the ABS publication *Small and Medium Enterprises, Business Growth and Performance Survey, Australia, 1995–96* (8141.0). A more detailed analysis of the job generation issues has been undertaken using

results from the 1994–95 survey, and these are reported in an ABS working paper *Analysis of Employment Change at Australian Firms*.

The following summarises some of the conclusions from the working paper, as well as showing the aggregate job generation and destruction flows from the 1995–96 survey.

The scope of BGAPS, and therefore the scope of this analysis, includes most non-agriculture employing firms in the private sector. Non-employing firms are excluded. Also excluded are the Education and the Health and community services industries which, from the analysis presented above, have been two of the major growth industries in recent years.

## Results for 1994–95

The 1994–95 survey, representing the first year of a longitudinal survey, is more akin to a regular ‘snapshot’ survey undertaken by ABS. However, because some data items (employment, sales and value of exports) were collected for three years in this first survey, it has provided a set of retrospective longitudinal data on employment, albeit based only on a sample of firms which were in operation at the end of the period. The limitations when using such a dataset include the inability to measure the impact of firms which are newly born or which die during the period. It is only possible to measure the impact of firms which continued operation over the period.

The first conclusion from this analysis relates to the extent to which net employment change hides a great deal of job turnover. The survey measured net employment change for continuing businesses of 137,000 in 1993–94 and 149,000 in 1994–95. Table S4.5 shows a dissection of employment change over two twelve month periods, 1993–94 and 1994–95.

**S4.5 JOB GENERATION AND DESTRUCTION**

	Small businesses		Other businesses		All businesses	
	1993–94	1994–95	1993–94	1994–95	1993–94	1994–95
	'000	'000	'000	'000	'000	'000
Employment generation	117	151	149	177	266	328
Employment destruction	58	96	71	84	129	180
Net employment change	58	55	79	93	137	149
Job turnover (generation and destruction)	175	249	220	261	395	508
‘Churnover’ factor	3.0	4.5	2.8	2.8	2.9	3.4

Source: Unpublished data, *Business Growth and Performance Survey 1993–94 and 1994–95*.

The table shows that the net employment change of 137,000 persons for 1993–94 was made up of 266,000 new jobs generated and 129,000 jobs destroyed. A summary statistic has been derived to describe the job turnover or ‘churning’ that may be concealed beneath the net change figures. This ‘churnover’ statistic is the ratio of job turnover to net job change for each size category. For 1993–94, there was a ‘churnover’ factor of 2.9, while 1994–95 showed an even greater degree of jobs churning over, indicated by a factor of 3.4.

In 1993–94, the ‘churnover’ for small businesses was about the same as for larger businesses. However, for 1994–95, the small business sector appears to have a far greater degree of job turnover than other businesses, as suggested by a ‘churnover’ factor of 4.5 compared to 2.8. For the small business sector in 1994–95, there were nearly 250,000 jobs turned over, for a net increase in employment of only 55,000 jobs. The net employment change was nearly the same as in 1993–94, but the turnover of jobs was 28,000 greater.

Looking at the concentration of job generation and destruction, it appears that there were more firms generating jobs than destroying them. In 1994–95, 18% of firms increased their employment by more than 10% and 14% decreased it by more than 10%. By comparison, in 1995–96, 26% of firms increased their employment by more than 10% and about 23% decreased their employment by more than 10%. Small business, which includes 94% of in scope businesses, reflected these rates very closely.

## Results for 1995–96 and 1996–97

The 1995–96 survey, being the second year of the longitudinal study, allowed the impact of new and ceased businesses to be assessed, rather than just using a static framework and sample as was used for the 1994–95 analysis above. This analysis can be continued as each subsequent survey in the longitudinal series becomes available. Table S4.6 shows revised job generation and destruction estimates for 1995–96, and table S4.7 shows the results from the 1996–97 survey as published in *Small Business in Australia* (1321.0).

**S4.6 JOB GENERATION AND DESTRUCTION—June 1995 to June 1996**

	Small businesses	Other businesses	All businesses
	'000	'000	'000
Employment generation			
New businesses	343	219	563
Continuing businesses	230	213	444
Total	573	432	1 006
Employment destruction			
Ceased businesses	194	141	335
Continuing businesses	181	180	361
Total	376	321	696
Net employment change	198	112	310
Job turnover (generation and destruction)	949	753	1 702
‘Churnover’ factor	4.8	6.7	5.5

Source: Unpublished data, Business Growth and Performance Survey, 1994–95 and 1995–96.

**S4.7 JOB GENERATION AND DESTRUCTION—June 1996 to June 1997**

	Small businesses	Other businesses	All businesses
	'000	'000	'000
Employment generation			
New businesses	322	234	557
Continuing businesses	185	210	396
<i>Total</i>	508	444	952
Employment destruction			
Ceased businesses	135	74	209
Continuing businesses	130	188	318
<i>Total</i>	265	261	527
Net employment change	243	183	425
Job turnover (generation and destruction)	773	705	1 479
'Churnover' factor	3.2	3.9	3.5

Source: Unpublished data, Business Growth and Performance Survey, 1995–96 and 1996–97.

The survey showed that total employment generated during 1996–97 was 952,000, made up of 557,000 jobs in new businesses and 396,000 in continuing firms. The revised data for 1995–96 show a similar picture, with 1,006,000 new jobs being generated (563,000 in new businesses and 444,000 in continuing firms). Total employment destruction during 1996–97 was 527,000, made up of 209,000 jobs from ceased businesses and 318,000 from continuing businesses. Employment destruction in 1995–96 was somewhat greater (696,000), with 335,000 jobs from ceased businesses and 361,000 from continuing businesses. Net employment generation was 425,000 in 1996–97 and 310,000 in 1995–96.

As in the 1994–95 analysis, it is apparent that the net employment change figure hides a great deal of 'churnover'. In total, during 1995–96, one million jobs were generated and almost 700,000 destroyed to come to the net increase of 310,000, giving a 'churnover' statistic of 5.5. The 'churnover' factor was lower in 1996–97 (3.5) but still very significant. This was mainly due to a reduced level of employment destruction coming from ceased businesses. These 'churnover' factors are much higher than the level calculated from the 1994–95 survey, but this is because the 1994–95 survey data did not include the contribution from new or ceasing businesses.

In both 1995–96 and 1996–97, the greatest proportion of net employment generation came from the small business sector. In 1996–97, the sector contributed 57% to net employment generation overall, while in 1995–96 the contribution was 64%.

This analysis shows the significance of births and deaths of businesses to the job generation process. More than half the jobs generated in each year are coming from businesses which commenced during the year. Similarly, a significant proportion of job destruction arose from ceased businesses—48% during 1995–96 and 40% during 1996–97.

The inclusion of business births and deaths is vital in any study of job generation to give a more complete understanding of the dynamics of change in employment patterns. These factors are also important in the development and formulation of employment policy for the small business sector.

The results from the longitudinal analysis, in which the small business sector is seen to contribute more strongly to net employment growth than larger businesses, appears to contradict the result discussed earlier, derived from the point-in-time analysis. The reasons for the apparent anomaly are as follows:

- the two results come from separate surveys, both of which are subject to sampling and non-sampling errors;
- the BGAPS survey has a different scope to the SEE and Labour Force Survey used earlier—non-employing businesses, and the Health and community services and the Education industries, are excluded from BGAPS, but are included in the earlier analyses; and



- the attribution to size in BGAPS is made by reference to the size of the firm as at the beginning of the analysis period (i.e. June 1995), whereas businesses were sized separately for each year of the earlier analysis. Hence, the earlier analysis reflected the effects of firms swapping size boundaries.

## Conclusion

Time series generated from point-in-time surveys present a useful picture for the analysis of employment in the different business size categories. However, a longitudinal dataset allows the investigation of a number of the more complex issues associated with employment patterns in Australian firms.

The ABS Business Growth and Performance Survey will in the future allow for a detailed study of job generation and destruction in Australia, unlike any that has been possible before. The tracking of firms longitudinally will enable the comparative impacts of births and deaths to be measured as well as the derivation of a number of other statistical indicators to show the concentration and persistence of job growth. It will also allow the decomposition of employment growth by size of business, age of business, sex, industry, type of employment, and State/Territory. Factors which might influence employment generation can also be examined using longitudinal analysis techniques.

The use of longitudinal data will also have the advantage of overcoming the impacts of firms swapping size boundaries, which is claimed by some international researchers to be a very significant problem for employment growth analyses.

While the BGAPS will become more useful for job generation and destruction analyses when a longer time series is available, two important points have become evident to date:

- the importance of births and deaths to studies of job generation and employment change; 1995–96 and 1996–97 data would suggest that these components contribute more than half of the jobs generated and more than 40% of the jobs destroyed; and
- the significant amount of ‘churning’ occurring in both the small and larger firm sectors, which is hidden in the more traditional forms of analysis.

The analyses in this article present a complex picture of the relative importance of the small and larger business sectors to employment growth. The initial analysis showed that both small business and larger businesses increased employment quite significantly in Australia over the past decade. There were periods when growth was stronger in the small business sector, and periods when larger businesses dominated.

However, the longitudinal analysis for the two years June 1995 to June 1997 shows that, over that period, small business was the strongest contributing sector to employment growth. The analysis also shows the critical importance of the formation of new businesses and the cessation of existing businesses to net job generation.

It is also clear that analysing net employment change alone will not bring to bear a significant amount of other information which is important to economic management in Australia.



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## Introduction

This chapter presents information about Australia's environment and its interaction with society and the economy. The topic encompasses a broad range of issues for which a vast amount of information is available. It is not possible to address all of these aspects here, but previous Year Books cover some topics including greenhouse gases, biodiversity, sustainable development, water quality and environmental law. The focus of this chapter is on recent national and international activities and issues for which new information has become available. This includes information on the Kyoto Protocol to the United Nations Convention on Climate Change; the National Land and Water Audit; the National Environmental Protection Council; environmental accounting; and previously included topics such as expenditure on the environment; the results of a household survey on environmental issues; and environmental indicators.

## National activities

### Climate change

On 20 November 1997, the Prime Minister made a statement titled *Safeguarding the Future: Australia's Response to Climate Change* in which he announced measures designed to build on the draft National Greenhouse Strategy. This statement detailed additional funding of \$180m over five years to address the greenhouse gas challenge. Table 14.1 shows the specifics of the Commonwealth funding allocations.

Two specific areas that have been targeted include the automotive industry and the energy sector. In the automotive industry, an Automotive Industry Environmental Strategy (AIES) will be developed. This strategy includes elements such as mandatory, model specific, fuel efficiency labelling; harmonising noxious emissions standards with international standards by the year 2006; fuel efficiency targets, negotiated with automotive companies and implemented by the year 2010; and bringing forward the phase-out of leaded petrol.

## 14.1 FUNDING FOR NATIONAL GREENHOUSE STRATEGY

	\$m
Residential	
Cities for Climate Protection	13.0
Household Greenhouse Action	2.2
Industry	
Extension and expansion of the Greenhouse Challenge Office	27.1
Energy performance codes and standards	
Domestic appliances and industrial equipment	4.4
Housing and commercial buildings	4.4
Industry efficiency benchmarking and best practice	10.3
Transport	
Automotive Industry Environmental Strategy (AIES)	0.5
Compressed natural gas (CNG) infrastructure	3.8
Ethanol Pilot Plant (funding previously announced)	2.0
Energy	
Accelerating energy market reform	5.6
Efficiency standards for power generation	4.1
Uptake of renewable energy in power stations	3.8
Renewable Energy	
Renewable Energy Innovation Investment Fund (REIIF)	21.0
Loans and grants	29.6
Renewable Energy Showcase	10.5
Internet site	0.3
International	
Activities implemented jointly	6.0
Revegetation, plantations and land-use	
Plantations—2020 vision	1.9
Bush for Greenhouse	5.5
National Carbon Accounting System	12.5
Reducing methane emissions from livestock	1.0
Government operations	
Energy efficiency improvement in Commonwealth operations	<0.1
Institutional Arrangement	
Establishment of the Commonwealth Greenhouse Office	<0.1
Other measures	
Funding for other National Greenhouse Strategy measures	10.5
<b>Total funding(a)</b>	<b>180.0</b>

(a) May not add due to rounding.

Source: Statement by the Prime Minister of Australia, the Hon. John Howard MP, 'Safeguarding the Future: Australia's response to Climate Change', 20 November 1997.

Measures to be implemented for the energy sector include a commitment to the use of renewable energy through research and development; investment funds; and loans and grants programs. The statement also initiates the development and implementation of efficiency

standards for fossil fuel electricity generation. The administration of these initiatives will be undertaken by the Australian Greenhouse Office which has been established within Environment Australia.

## National Land and Water Resources Audit (NLWRA)

The NLWRA is a \$32m initiative being developed under the Natural Heritage Trust. It is being undertaken in conjunction with the Commonwealth Government, the State and Territory Governments, industry and community groups. The purpose of the Audit can be summed up by its mission statement, “(t)o provide nationwide assessments of Australia’s land, vegetation and water resources to support sustainable development now and in the future” (Commonwealth of Australia, 1998, p. 7).

The focus of the Audit will be on land and water resources, reporting the current use and management of the resources for a range of productive and conservation values. To facilitate this outcome, the Audit has identified themes on which it will report. These are:

- surface and ground water management—availability, allocation, use and efficiency;
- dry land salinity;
- vegetation cover, condition and use;
- rangelands monitoring;
- land use change, productivity, diversity and sustainability of agricultural enterprises;
- capacity of, and opportunity for, farmers and other natural resource managers to implement change; and
- river, estuary, catchment and landscape health.

To improve decision making about land and water resource management, the objectives of the Audit are to provide:

- a clear understanding of the status of, and changes in the nation’s land, vegetation and water resources;
- a report on resource changes, with respect to economic, environmental and social value;
- an integrated and nationally comparable data set of resources which can be maintained as a national information system;
- a national water resources assessment, reporting on surface and ground water resources, quality, supply, capacity and use;

- reporting links to other processes, such as the State of the Environment Report, indicators of sustainable agricultural practices, etc.; and
- a framework for long-term monitoring and assessment of the health and management of Australia’s land and water resources that meets the needs of major stakeholders.

## National Environment Protection Council (NEPC)

The NEPC has the objective of ensuring that:

- the people of Australia enjoy the benefit of equivalent protection from air, water and soil pollution and from noise, wherever they live; and
- decisions by businesses are not distorted and markets are not fragmented by variations between jurisdictions in relation to the adoption or implementation of major National Environmental Protection Measures (NEPMs).

NEPMs are broad framework documents containing agreed national objectives for protecting particular aspects of the environment. They typically contain a goal; standards; and monitoring and reporting protocols.

At the time of writing, three NEPMs have been finalised. These involve Ambient Air Quality; the Movement of Controlled Waste Between States and Territories; and the National Pollutant Inventory. Discussion papers on the Assessment of Contaminated Sites and on Used Packaging Materials were released in July 1998 for consultation with key stakeholders. Other possible topics for NEPMs include estuarine and marine water quality; and motor vehicle diesel emissions.

The NEPC has a dual function:

- to reach agreement on NEPMs; and
- to assess and report on the implementation and effectiveness of NEPMs in all jurisdictions.

The NEPC obtains funding from all jurisdictions. Funding over the two years 1996–97 and 1997–98 totalled just over \$2.8m. About 45% (\$1.3m) of this amount is earmarked for NEPM development. The remainder is attributed to the NEPC Service Corporation’s operational budget.

## Australia's international activities

Australia's international activities are centred on developing and promoting the Government's position, in liaison with relevant Commonwealth and State Government agencies, industry and non-government organisations (NGOs), in the ongoing negotiations on:

- trade in hazardous chemicals, and in hazardous wastes (the Basel Convention);
- a Biosafety Protocol on the trade in living modified organisms;
- the Desertification Convention; and
- the proposed convention on forests.

Additionally, as a result of the 1997 Kyoto Conference on Climate Change, other issues have emerged relating to greenhouse gases and climate change. These are discussed below, along with current international activities relating to forests.

## Greenhouse gases

### The Kyoto Protocol

The Kyoto Protocol to the United Nations Framework Convention on Climate Change, held in Kyoto, Japan from 1 to 10 December 1997, represented the third UN session on climate change. Previous United Nations sessions on Climate Change have been held in Rio de Janeiro and Berlin. Parties to the Protocol are those countries who were members of the OECD in 1992, East European countries and Russia.

The Kyoto Protocol is significant in that it represents, for the first time, legally binding commitments by developed countries to reduce their greenhouse gas emissions and address the threat of climate change. The six greenhouse gases covered by the Protocol are: carbon dioxide (CO<sub>2</sub>); methane (CH<sub>4</sub>); nitrous oxide (N<sub>2</sub>O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF<sub>6</sub>). Developed countries have collectively agreed to reduce greenhouse gas emissions by at least 5% below 1990 levels by 2008 to 2012.

In recognition of the fact that all developed countries have different economic circumstances and differing capacities to make emission reductions, each developed country has a specific, differentiated target. These differentiated targets range from an 8% reduction for the European Union, to a 10% increase for Iceland from

1990 levels by 2008–12. Australia's requirement is to limit the growth of its greenhouse gas emissions in the target period to 8% above 1990 levels.

The Kyoto Protocol allows Australia to include emissions from land clearing in the calculation of its target. Reductions in greenhouse emissions from sources and removals of carbon by sinks can be used to meet target commitments. The Protocol targets are formulated as emissions budgets which will allow countries to 'bank' emissions reductions. The Protocol also provides for the trading of emission entitlements, enabling countries to buy emission credits from other countries where emissions reductions can be made at low cost. In 2005 negotiations will commence for a new Protocol for the period beyond 2012.

### Emissions trading and carbon credits

A key feature of the Kyoto Protocol is an agreement to establish an emissions trading system among the industrialised countries for the purposes of fulfilling their commitments. If introduced, the system would be based on a permit that authorised the holder to emit a specified amount of greenhouse gas, although details at an international level have yet to be negotiated.

Carbon sinks, such as forestry plantations, could be incorporated into an emissions trading system by allocating permits, identical to emission permits, for the amount of carbon sequestered. Plantation operators could then sell these permits in an emissions trading system. At this stage, however, the Government has not made any decisions on emissions trading or the incorporation of carbon sinks into such a system, and there is no official system in place to provide carbon credits to owners of forest plantations which can be sold in an emissions trading system.

### National Carbon Accounting System (NCAS)

To enable appropriate accounting of both public and private sector measures in land use change, forestry and agriculture in Australia, NCAS has been established. This System provides a basis for assessing changes in Australia's land-based carbon stocks (sources and sinks), by providing the framework and services necessary to account for greenhouse gas emissions reduction and sink enhancement programs. The NCAS will provide a basis for Australia's international reporting under the United Nations Framework Convention on Climate Change and the Kyoto Protocol, and support an internationally credible emissions trading scheme if required.



## Forests

Australia is a part of the Montreal Process. The Montreal Process comprises a Working Group of representatives from ten countries that first met in 1994 to develop a set of criteria and indicators for the Conservation and Sustainable Management of Temperate and Boreal forests. The Montreal Process has identified 67 indicators with which to measure changes to specified criteria. The Montreal Process Implementation Group (MIG) is a Commonwealth-State working group which has adapted the Montreal Process indicators for applicability to Australia's forest resources. The criteria are:

- biological diversity;
- productive capacity;
- ecosystem health and vitality;
- soil and water resources;
- global carbon cycles;
- socioeconomic benefits; and
- an effective legal, institutional and economic framework.

Following the release of Australia's First Approximation Report for the Montreal Process (June 1997), the MIG has identified a subset of indicators which are largely implementable for Australian forests. These are known as Category A indicators.

Examples of the types of indicators that could be implemented now include:

- the extent of forest area by forest type and tenure;
- the status of forest dwelling species;
- annual removal of wood products compared to the sustainable volume; and
- direct and indirect employment in the forest sector.

Two other groups of indicators have been identified, those that have short-term methodological and resourcing problems (Category B indicators) and those which require long-term research and development (Category C indicators).

## Environmental indicators

In 1992, the Organisation for Economic Cooperation and Development (OECD) established an Environmental Performance Review in order to evaluate the performance of member countries in implementing their domestic environmental policies and international commitments.

The OECD has developed a core set of indicators to be used in environmental performance reviews of member countries. There are three broad categories of indicator, based on the Pressure-State-Response framework:

- indicators of environmental pressure, describing pressures from human activities exerted on the environment;
- indicators describing environmental condition, that report on the quality of the environment, and the quantity and quality of natural resources; and
- indicators of societal responses, which show the extent to which society is responding to environmental changes and concerns.

Table 14.2 presents statistical information on indicators of environmental pressure prepared by the OECD, and shows a comparison of Australia with selected OECD countries and all OECD countries combined.

Australia is significant in its high biodiversity relative to other OECD countries. In particular, the number of known fish species (4,195) and vascular plants (25,000) is substantially higher than in any other OECD country. As a consequence, the percentage of species threatened in Australia is at the lower end of the scale.

## 14.2 OECD ENVIRONMENTAL INDICATORS

Indicators	Unit	Australia	Canada	Netherlands	Sweden	U.K.	U.S.A.	OECD
CO <sub>2</sub> Emissions from energy use (1995)	Mt	<b>286</b>	471	179	56	565	5 229	11 780
Emissions per capita	tonne/capita	<b>15.8</b>	15.9	11.6	6.3	9.6	19.9	10.9
Ozone depleting substances Consumption (1995)								
CFCs	kg/capita	<b>0.14</b>	0.16	0.06	n.a.	n.a.	0.14	0.08
HCFCs	kg/capita	<b>0.01</b>	0.02	n.a.	n.a.	n.a.	0.05	0.03
Total	kg/capita	<b>0.15</b>	0.18	n.a.	n.a.	n.a.	0.19	0.11
Air quality(a)								
Emissions of sulphur oxides								
Total	Kt	<b>2 150</b>	2 668	148	94	2 360	16 619	43 600
Intensities per capita	kg/capita	<b>119</b>	91	10	11	40	63	40
Emissions from nitrogen oxides								
Total	Kt	<b>2 174</b>	1 995	540	362	2 293	19 758	42 900
Intensities per capita	kg/capita	<b>120</b>	68	35	41	39	75	40
Waste generation								
Municipal waste, of which	kg/capita	<b>690</b>	630	580	440	490	720	530
Household waste	percentage	<b>58.0</b>	49.2	81.0	81.8	93.9	n.a.	n.a.
Industrial, nuclear and hazardous waste								
Industrial waste(a)	Kt	<b>37 040</b>	n.a.	7 920	13 970	56 000	n.a.	1 500 000
Nuclear waste (1995)								
Spent fuel arisings	tonnes Heavy metal (HM)	<b>0</b>	1 690	14	213	1 713	2 100	9 082
Hazardous waste(b)	Kt	<b>423</b>	5 808	1 593	470	1 912	191 091	n.a.
Intensity of use of water resources								
Abstractions per capita	m3/capita/year	<b>840</b>	1 600	520	310	180	1 880	930
Fish catches and consumption								
Total fish catches (1995)	kg/capita	<b>10.8</b>	28.2	28.3	45.7	15.5	19.8	26.4
Fish consumption (1995)	kg/capita	<b>18.2</b>	21.4	14.4	27.7	19.0	22.0	26.9
Threatened species								
Mammals								
Species known	no.	<b>315</b>	193	64	66	63	466	n.a.
Species threatened	%	<b>15</b>	24	16	18	22	11	n.a.
Birds								
Species known	no.	<b>777</b>	514	170	245	517	1 090	n.a.
Species threatened	%	<b>6</b>	9	27	9	23	7	n.a.
Fish								
Species known	no.	<b>4 195</b>	276	28	150	54	2 640	n.a.
Species threatened	%	<b>0</b>	22	82	5	11	2	n.a.
Reptiles								
Species known	no.	<b>770</b>	43	7	7	7	368	n.a.
Species threatened	%	<b>7</b>	28	86	0	43	7	n.a.
Amphibians								
Species known	no.	<b>203</b>	42	16	13	7	222	n.a.
Species threatened	%	<b>14</b>	10	56	54	29	4	n.a.
Vascular plants								
Species known	no.	<b>25 000</b>	3 300	1 392	1 900	2 297	22 200	n.a.
Species threatened	%	<b>4</b>	3	35	11	8	1	n.a.

(a) Mid-1990s. (b) To be managed.

Source: OECD, *Towards Sustainable Development: Environmental Indicators*, OECD Publications, France, 1998.

## Environmental views and practices

People's views and practices reflect the importance and priority given to environmental issues by society. The ABS has conducted a household survey on environmental issues biennially since 1992. From 1998, the survey will be conducted annually. Some of the results of these surveys are presented here.

### Environmental concerns

The reported levels of concern by Australians about particular environmental problems are summarised in table 14.3. Concerns have been ranked according to levels reported in 1996. Overall, concern about environmental problems has declined between 1992 and 1998. In general, the sharpest decline occurred between 1992 and 1994.

Air pollution was the issue of concern to the greatest proportion of people in all surveys. Ocean and freshwater pollution, and the destruction of trees and ecosystems were the next

most commonly reported concerns, with freshwater pollution ranking above ocean pollution in 1998. Other areas of increasing concern between 1996 and 1998 include toxic chemical and hazardous waste; and the greenhouse effect. Destruction of animals/wildlife and extinction of species, and other pollution, dropped in ranking as environmental problems of concern between these years.

### Product packaging

One of the topics explored in the 1998 Environmental Issues survey related to product packaging issues. Asked whether they would accept less packaging, 87% of respondents replied that they would. The primary reason for accepting less packaging was that there would be less garbage (76% of respondents). The next most common reasons, although far less frequently stated, included: items were cheaper; it was safer for the environment; and less packaging would save resources and trees. Reasons for accepting less packaging were fairly uniform across States and Territories. Table 14.4 summarises the results of the survey.

**14.3 ENVIRONMENTAL CONCERNS**

	1992	1994	1996	1998
	%	%	%	%
Air pollution	40.2	34.1	30.9	32.4
Ocean pollution	32.3	26.7	23.8	24.1
Freshwater pollution	29.9	25.5	23.7	26.7
Destruction of trees/ecosystems/deforestation	32.8	25.6	23.6	21.7
Garbage/rubbish disposal	22.9	15.7	14.0	14.7
Ozone layer	28.6	17.1	10.9	13.4
Destruction of animals/wildlife/extinction of species	19.3	13.3	9.1	9.6
Other pollution	14.1	9.1	8.8	4.5
Toxic chemical/hazardous waste	21.3	11.9	8.6	11.5
Nuclear testing/weapons	14.6	6.7	7.6	7.0
Greenhouse effect	17.2	8.8	6.3	10.1
Urban development/overpopulation	12.6	7.8	5.9	8.8
Other	5.8	5.7	5.5	3.9
Uranium mining/use/radioactive materials	8.5	3.6	5.1	5.4
Use of pesticides	13.7	7.0	4.2	6.4

Source: *Environmental Issues: People's Views and Practices (4602.0)*.

## 14.4 REASONS FOR ACCEPTING LESS PACKAGING—1998

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust.
	%	%	%	%	%	%	%	%	%
Less garbage	77.5	75.8	71.3	80.2	72.2	73.2	76.4	74.6	75.5
Cheaper	26.5	21.0	23.5	21.8	24.9	23.2	22.7	19.0	23.8
Safer for environment	27.4	29.2	24.6	21.5	27.6	24.6	34.7	29.3	26.9
Saves resources/trees	26.9	19.9	18.2	18.1	20.0	18.1	23.5	22.1	21.9
Convenience	7.7	5.2	4.1	3.0	4.9	5.5	5.9	5.8	5.7
Advertising unnecessary	6.3	4.3	2.3	3.5	5.1	3.7	6.3	2.5	4.6
Other reason	2.8	3.7	4.3	3.4	4.2	3.9	2.6	4.5	3.5
Don't know	1.9	0.7	1.5	1.6	1.2	1.8	1.0	2.1	1.4

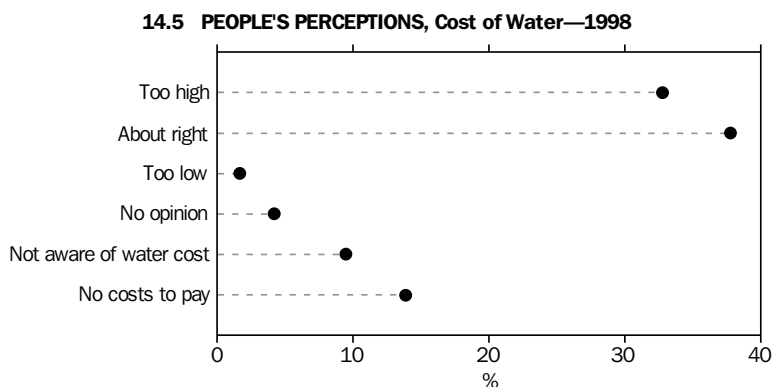
Source: *Environmental Issues: People's Views and Practices* (4602.0).

## Water costs

Water is an important issue for rural and urban Australian households. Both are frequently affected by water restrictions, especially during the summer months. Hence the cost of water is increasingly becoming an area of social awareness. Australia is also affected by water quality problems. These include blue-green algae and salinity in our river systems. Recently, the contamination of Sydney's water supply highlighted people's dependence on a source of clean drinking water.

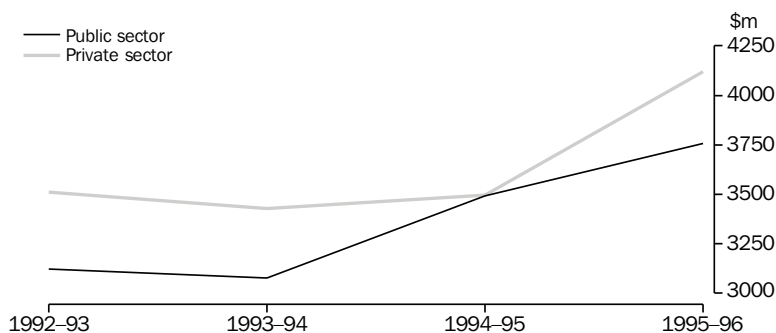
Nearly half (49%) of people surveyed stated that the cost of water influences the amount of water used in and around their homes. Australia has a system of displaying water consumption ratings on appliances such as washing machines and dishwashers. In the 1998 survey, 70% of people stated that they were aware of water ratings on appliances and 72% indicated that, when purchasing a washing machine or dishwasher, they take into account the amount of water used by the machine in the decision to purchase the appliance.

Graph 14.5 shows people's perceptions about the cost of water. About 33% of people think the cost is too high, while 38% think the cost is about right.



Source: *Environmental Issues: People's Views and Practices* (4602.0).

**14.6 TOTAL EXPENDITURE ON ENVIRONMENT PROTECTION,  
Private and Public Sectors**



Source: *Environment Protection Expenditure, Australia (4603.0)*.

## Expenditure on protection of the environment

Statistics on environment protection expenditure are indicative of the response of various sectors to environment protection regulations and policies. They also provide some indication of the demand for goods and services provided by the environment management industry.

Graph 14.6 shows the total expenditure on environment protection by sector. Total expenditures by both the public and private sectors have grown between 1992-93 and 1995-96. Public sector growth since 1993-94 has been primarily due to expenditure on sanitation and protection of the environment. Private sector environment protection expenditure (including household expenditure) remained relatively stable between 1992-93 and 1994-95, with a relatively large rise in expenditure between 1994-95 and 1995-96. This was mainly due to an increase in capital expenditure by the manufacturing industry.

Estimates for expenditure on environment protection between 1992-93 and 1995-96 are summarised by sector and industry in table 14.7. Total environment protection expenditure has remained stable as a percentage of Australia's GDP (at about 1.5%) over these years.

Private sector expenditure on environment protection is dominated by the manufacturing industry and the household sector. Graph 14.8 shows a general downward trend in capital and current expenditure to protect the environment between 1992-93 and 1994-95. However, between 1994-95 and 1995-96 capital expenditure rose sharply due to increased expenditures by the following manufacturing subdivisions: wood and paper product; petroleum, coal, chemical and associated product; and machinery and equipment.

A summary of expenditure by manufacturing industry subdivision is shown in table 14.9. Changes to survey collection methodology may have also contributed to variations in expenditure between 1992-93 and 1995-96.

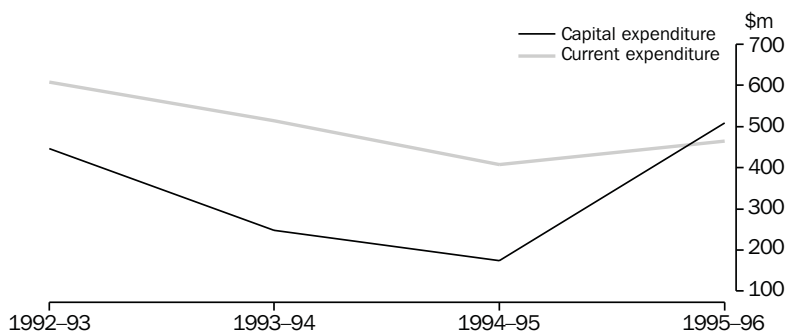
## 14.7 ESTIMATES OF ENVIRONMENT PROTECTION EXPENDITURES

	1992-93	1993-94	1994-95	1995-96
	\$m	\$m	\$m	\$m
<b>PUBLIC SECTOR</b>				
Sanitation and protection of the environment(a)				
Capital	1 106.0	1 008.0	1 275.0	1 210.0
Current	774.0	761.0	827.0	1 089.0
Total	1 880.0	1 769.0	2 102.0	2 299.0
Other identified environment protection expenditures(b)	1 073.5	1 172.1	1 237.5	1 298.9
Gas and electricity utilities				
Capital	80.9	56.9	77.4	71.7
Current	86.8	79.7	76.7	86.4
Total	167.7	136.6	154.2	158.1
<i>Total public sector</i>	<i>3 121.2</i>	<i>3 077.7</i>	<i>3 493.7</i>	<i>3 756.0</i>
<b>PRIVATE SECTOR</b>				
Agriculture(c)	96.3	112.1	177.5	191.5
Mining				
Capital	48.3	57.1	73.5	99.8
Current	95.7	128.8	127.4	150.8
Total	144.0	185.9	200.9	250.7
Manufacturing				
Capital	421.6	227.8	154.0	432.0
Current	574.2	473.7	359.4	393.9
Total	995.7	701.5	513.4	825.9
Service and other industries(d)				
Current	348.6	451.1	646.0	726.4
Household sector(e)	1 926.2	1 978.0	1 958.2	2 125.1
<i>Total private sector</i>	<i>3 510.8</i>	<i>3 428.6</i>	<i>3 496.0</i>	<i>4 119.6</i>
<b>PUBLIC AND PRIVATE SECTOR</b>				
<b>Total</b>	<b>6 632.0</b>	<b>6 506.3</b>	<b>6 989.7</b>	<b>7 875.6</b>

(a) Refers to outlays recorded in ABS Government Finance statistics. (b) Expenditure derived from Commonwealth and State and Territory budget papers, and departmental annual reports. Combined capital and current expenditure. (c) Separate estimates for capital and current expenditures not available. (d) Current expenditure only collected. (e) In line with National Accounts concepts, all household expenditure is treated as current expenditure.

Source: *Environment Protection Expenditure, Australia* (4603.0).

## 14.8 ENVIRONMENT PROTECTION EXPENDITURE, Manufacturing Industry(a)



(a) At average 1989-90 prices.

Source: *Environment Protection Expenditure, Australia* (4603.0).

**14.9 ENVIRONMENT PROTECTION EXPENDITURE(a), By Industry**

ANZSIC Subdivision	Industry	1992–93 \$m	1993–94 \$m	1994–95 \$m	1995–96 \$m
<b>CAPITAL EXPENDITURE</b>					
21	Food, beverage and tobacco	31.2	49.1	47.7	63.5
22	Textile, clothing, footwear and leather	5.6	2.9	0.6	11.1
23	Wood and paper product	38.0	46.1	14.3	82.0
24	Printing, publishing and recorded media	3.0	3.7	1.7	3.3
25	Petroleum, coal, chemical and associated product	115.2	37.4	27.2	66.5
26	Non-metallic mineral product	20.1	11.3	3.7	17.3
27	Metal product	222.6	79.7	74.5	128.2
28	Machinery and equipment	10.2	16.9	4.1	133.9
29	Other manufacturing	0.8	0.5	0.8	3.3
<b>21–29</b>	<b>Total manufacturing</b>	<b>446.7</b>	<b>247.7</b>	<b>174.5</b>	<b>509.1</b>
<b>CURRENT EXPENDITURE</b>					
21	Food, beverage and tobacco	92.8	86.1	77.4	101.5
22	Textile, clothing, footwear and leather	25.3	17.1	6.5	27.2
23	Wood and paper product	40.6	20.1	15.0	53.0
24	Printing, publishing and recorded media	10.0	9.5	11.9	23.6
25	Petroleum, coal, chemical and associated product	100.7	114.5	67.1	68.6
26	Non-metallic mineral product	26.0	26.6	19.0	33.9
27	Metal product	253.4	187.2	186.9	77.3
28	Machinery and equipment	51.2	47.8	21.4	47.4
29	Other manufacturing	8.4	6.2	2.2	31.7
<b>21–29</b>	<b>Total manufacturing</b>	<b>608.2</b>	<b>515.1</b>	<b>407.3</b>	<b>464.2</b>
<b>TOTAL EXPENDITURE</b>					
21	Food, beverage and tobacco	124.0	135.3	125.1	165.0
22	Textile, clothing, footwear and leather	31.0	20.1	7.0	38.3
23	Wood and paper product	78.6	66.4	29.2	135.1
24	Printing, publishing and recorded media	12.9	13.2	13.6	26.9
25	Petroleum, coal, chemical and associated product	215.8	152.1	94.3	135.1
26	Non-metallic mineral product	46.1	38.0	22.8	51.3
27	Metal product	476.1	266.9	261.4	205.5
28	Machinery and equipment	61.4	64.6	25.5	181.3
29	Other manufacturing	9.1	6.7	2.9	35.0
<b>21–29</b>	<b>Total manufacturing</b>	<b>1 055.1</b>	<b>763.2</b>	<b>581.9</b>	<b>973.4</b>

(a) At average 1989–90 prices.

Source: *Environment Protection Expenditure, Australia (4603.0)*.**Environmental accounting**

The ABS is currently undertaking preliminary work towards development of environmental accounts. These provide an information system which links the measurement of human activities to changes in the environment and resource base. This work follows the guidelines in the UN *System for Integrated Environmental and Economic Accounts (SEEA)*, a complement to the 1993 edition of the *System of National Accounts (SNA93)*.

Physical resource accounts, and expenditure on environmental protection and repair, are two aspects of these accounts. Works in progress include physical resource accounts for fish, energy and water; and the Environment Protection Expenditure Account (to which the estimates in table 14.7 would be inputs). The Mineral Account for Australia, released in 1998, is the first of the ABS publications reporting on estimates of Australia's naturally occurring mineral and petroleum resources, in quantity terms.

## Mineral Account for Australia

The Mineral Account presents mineral and petroleum resource estimates for 1985 to 1996 (stock estimates), as well as the movement of resources from extraction through to productive use for 1992–93 and 1993–94 (flow estimates).

Table 14.10 quantifies resource changes that occurred between 1995 and 1996 for selected mineral commodities (termed 'volume changes'). Changes can occur to economic demonstrated resources (EDR—for which extraction is expected to be profitable),

sub-economic demonstrated resources (SDR—high geological assurance of their existence, but extraction is not profitable for economic/technological reasons), or inferred resources (IFR—low geological assurance of their existence). The major reasons for change between the two periods were: production which decreases the mineral resource; discoveries which add to the resource base; and industry revisions, where the holders of a resource have revised their estimates based on, for example, changes to cut-off grades or pit limits.

**14.10 MINERAL RESOURCE VOLUME CHANGES—Calendar Year 1996**

Resource category	Production	Discovery	Reclassification economic	Reclassification technical	Industry revision	Other volume change n.e.c.	Resource change
NICKEL (kt)							
EDR(a)	-113.0	2 467.0	676.0	0.0	-331.0	-61.0	2 638.0
SDR(b)	—	1 093.0	1 953.0	0.0	101.4	135.0	827.0
IFR(c)	—	2 139.0	111.0	0.0	-16.5	-2.0	2 232.0
GOLD (t)							
EDR	-289.0	493.8	62.5	0.0	-21.6	-54.6	191.1
SDR	—	140.0	-52.3	0.0	33.0	-6.0	115.0
IFR	—	511.0	0.0	0.0	-12.0	10.0	509.0
GEM AND NEAR GEM DIAMOND (Mc)							
EDR	-23.1	0.0	0.0	0.0	0.0	6.9	-16.2
SDR	—	0.0	0.0	0.0	65.6	2.0	67.6
IFR	—	0.0	0.0	0.0	-6.9	0.1	-6.8
INDUSTRIAL DIAMOND (Mc)							
EDR	-18.9	0.0	0.0	0.0	0.0	-19.0	-37.9
SDR	—	0.0	0.0	0.0	44.4	0.0	44.4
IFR	—	0.0	0.0	0.0	-18.4	0.0	-18.4
IRON ORE (Mt)							
EDR	-147.0	0.0	0.0	0.0	32.0	82.0	-33.0
SDR	—	0.0	0.0	0.0	0.0	24.0	24.0
IFR	—	169.0	0.0	0.0	0.0	24.0	193.0
BAUXITE (Mt)							
EDR	-43.1	175.0	0.0	0.0	309.0	43.1	484.0
SDR	—	0.0	0.0	0.0	157.0	-73.0	84.0
IFR	—	425.0	0.0	0.0	-886.0	-75.0	-536.0
BLACK COAL (Mt)							
EDR	-251.9	0.0	0.0	0.0	0.0	130.0	-121.9
SDR	—	0.0	0.0	0.0	0.0	0.0	0.0
IFR	—	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.

(a) Economic demonstrated resources. (b) Sub-economic demonstrated resources. (c) Inferred resources.  
n.c. = not counted as resource is very large.

Source: *Mineral Account, Australia* (4608.0).



## Environmental research and development

An extensive knowledge base and reliable data are necessary for assessing the quality of Australia's environment and for developing appropriate policy and management strategies. The increased resources devoted to environmental research and development in recent years have contributed to an expansion of available information. Expenditure on environment-based research increased from \$574.5m in 1994–95 to \$657.6 in 1996–97. The number of person years devoted to research and development in the environment sector increased

from 6,732 to 6,799 over the same period. Table 14.11 summarises, by socio-economic objective, expenditure and human resources devoted to research and development in 1996–97.

The environment accounted for about 20% (\$412.4m) of government expenditure and 4% (\$245.2m) of non-government expenditure on research and development in 1996–97. This differs from the expenditure pattern relating to most other socio-economic objectives, for which non-government sources contribute a larger proportion of resources.

**14.11 RESOURCES DEVOTED TO RESEARCH AND DEVELOPMENT—1996–97**

Socio-economic objective	Government		Non-government		Total	
	\$m	Person years	\$m	Person years	\$m	Person years
Defence	234.0	2 006	200.6	1 133	434.6	3 139
Economic development	1 132.0	10 285	4 184.1	31 753	5 316.2	43 038
Society	249.3	3 502	847.5	13 222	1 096.7	16 724
Advancement of knowledge	62.5	530	1 125.4	21 288	1 187.9	21 817
Environment						
Environmental knowledge	280.8	2 072	144.5	2 258	425.3	4 329
Environmental aspects of economic development	94.2	821	59.3	769	153.4	1 590
Environmental management and other aspects	37.4	302	41.5	578	78.9	880
Total environment	412.4	3 195	245.2	3 604	657.6	6 799
<b>Total</b>	<b>2 090.2</b>	<b>19 518</b>	<b>6 602.8</b>	<b>71 001</b>	<b>8 693.0</b>	<b>90 519</b>

Source: Research and Experimental Development, All Sector Summary, Australia (8112.0).

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National Environment Protection Council, <http://www.nepc.gov.au/about.html>

Organisation for Economic Cooperation and Development, <http://www.oecd.org>

United Nations, <http://www.un.org>

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## Introduction

The evolution of Australian agricultural industries has been determined by interacting factors such as the opening up of new land, the development of transport facilities and profitable markets, and technical and scientific achievements.

Until the late 1950s, agricultural products accounted for more than 80% of the value of Australia's exports. Since then, that proportion has declined markedly as the Australian economy has become increasingly diverse, and the quantity and value of production of the mining, manufacturing and, in recent years, the services sectors have expanded (this decline in importance has not been due to a decline in agricultural activity, as agricultural output has increased over this period). The direct contribution of agriculture to Gross Domestic Product (GDP) is currently 3%. Agriculture is a vital and thriving sector and occupies a significant place in global rural trade, with wool, beef, wheat and sugar being particularly important in volume terms. Australia is also an important source of dairy produce, fruit, cotton, rice and flowers.

## The agricultural environment

Australia is a relatively flat continent, with mean elevation just exceeding 200 metres. The dominant feature of the continent is the Great Dividing Range which spans the length of the Eastern Seaboard. There are very few naturally good soils for agriculture. Most are infertile and shallow with deficiencies in phosphorus and/or nitrogen. To offset these deficiencies superphosphate and nitrogenous fertilisers are widely used, particularly on pasture and cereal crops. Fragile soil structure and a susceptibility to waterlogging are other common features of Australian soils, while large areas are naturally affected by salt or acidity. These soil characteristics restrict particular agricultural activities or rule out agricultural activity altogether.

With the exception of Antarctica, Australia is the world's driest continent. The wet northern summer is suited to beef cattle grazing inland and the growing of sugar and tropical fruits in coastal areas. The drier summer conditions of southern Australia favour wheat and other dryland cereal farming, sheep grazing and dairy cattle (in the higher rainfall areas) as well as beef cattle. Within regions there also exists a high degree of rainfall variability from year to year, which is most pronounced in the arid and

semi-arid regions. Rainfall variability often results in lengthy periods without rain (dry spells) and drought. The seasonality and variability of rainfall in Australia require that water be stored, and 70% of the stored water resource (including ground water) is consumed by the agricultural sector. Storage ensures that there are adequate supplies all year round for those agricultural activities requiring a continuous supply. Irrigation has opened up areas of Australia to agricultural activities which otherwise would have not been suitable for agriculture.

Evaporation is another important element of Australia's environment affecting agricultural production. Hot summers are accompanied by an abundance of sunlight. This combination of climatic variables leads to rates of evaporation which are high relative to those in other continents. Areas that have been cleared for crop and pasture production tend to coincide with five to nine months effective rainfall (where rainfall exceeds evaporation) per year. In areas of effective rainfall of more than nine months, generally only higher value crops or tropical crops and fruits are grown, while in areas with effective rainfall of less than five months, cropping is usually restricted to areas that are irrigated.

Since European settlement the vegetation of Australia has been altered significantly. In particular, large areas of Australia's forest and woodland vegetation systems have been cleared, predominantly for agricultural activity. The areas that have been altered most are those which have been opened up to cultivation or intensive grazing. Other areas, particularly in the semi-arid regions where extensive grazing of native grasses occurs, now show signs of returning to timber and scrub.

For more detail, see *Chapter 1, Geography and Climate*.

## Agricultural improvements

### Irrigation

Most crops require a minimum amount of annual rainfall to grow successfully without irrigation. The variability in river flow and annual rainfall which are features of the Australian environment means that successful irrigation of crops and pastures is dependent on storage. Ground water supplies are used in areas where the quantity is adequate and the quality is suitable.

**15.1 AREA OF CROPS AND PASTURES IRRIGATED—1997**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha
Pastures	346	455	48	50	11	25	—	—	934
Cereals	280	19	31	3	2	2	—	—	336
Vegetables for human consumption	15	20	23	8	7	15	—	—	89
All fruits	34	39	23	44	7	3	1	—	153
All other crops	233	13	106	10	2	7	—	—	372
Sugar cane	—	—	172	—	1	—	—	—	173
<b>Total</b>	<b>907</b>	<b>546</b>	<b>404</b>	<b>115</b>	<b>30</b>	<b>52</b>	<b>2</b>	<b>—</b>	<b>2 057</b>

Source: AgStats (7117.0).

The area of land irrigated, about 2.1 million hectares in 1997 (see table 15.1), represents less than 1% of the total land used for agriculture. Areas under vegetables, fruit and sugar cane are the most intensively irrigated crops with 69%, 67% and 44%, respectively, of their total growing areas sown being irrigated.

Most irrigated land is located within the confines of the Murray-Darling Basin, which covers parts of New South Wales, Victoria, Queensland and South Australia.

**Fertilisers**

Most Australian soils are deficient in phosphorus. Because of this and the significant but less widespread deficiency of sulphur in many soils, phosphate fertilisers, particularly single strength superphosphate, account for the bulk of fertiliser use (see table 15.2). Over half of superphosphate is used on pastures in areas with moderate to good rainfall. Large quantities are also used on cereal crops. Nitrogen deficiency is also generally evident in Australian soils and the use of nitrogenous fertilisers is increasing. Potassium

deficiency is confined mainly to soils in the higher rainfall areas which are intensively cropped or used for irrigated pastures.

**Characteristics of Australian farms**

In 1996–97, there were 145,086 establishments with an Estimated Value of Agricultural Operations (EVAO) greater than \$5,000 undertaking some agricultural activity. The main activity of the majority of these establishments (142,478) was agricultural. While the remainder were undertaking some form of agricultural activity, their predominant activity was non-agricultural. Farms engaged in beef farming (32,821), grain/sheep/beef farming (20,517), grain growing (16,352), sheep farming (14,346) and dairy cattle farming (13,975) account for the majority of agricultural activities.

Table 15.3 provides information on the numbers and types of establishments with agricultural activity at 31 March 1997.

**15.2 ARTIFICIAL FERTILISERS, Area and Usage**

Year	Area fertilised	Superphosphate used	Nitrogenous fertilisers used	Total all fertilisers used
	'000 ha	'000 t	'000 t	'000 t
1990–91	23 627	(a)	(a)	3 239
1991–92	19 517	(a)	(a)	2 678
1992–93	19 702	(a)	(a)	2 761
1993–94	20 529	(a)	(a)	3 000
1994–95	(b)	(b)	(b)	(b)
1995–96	28 415	1 614	880	(c)3 581

(a) Not collected separately. (b) Not collected. (c) Includes 1,087 tonnes of fertilisers other than nitrophosphate and nitrogenous fertilisers.

Source: AgStats (7117.0).

## 15.3 ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY—As at 31 March 1997

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Establishments mainly engaged in agriculture, forestry and fishing industries									
<i>Agriculture</i>									
Plant nurseries	729	318	685	128	147	43	20	4	2 074
Cut flower and flower seed growing	238	233	192	125	147	48	6	0	989
Vegetable growing	706	1 001	1 367	535	549	627	12	2	4 799
Grape growing	837	1 901	98	1 802	294	72	3	1	5 008
Apple and pear growing	222	427	106	128	218	164	0	2	1 267
Stone fruit growing	461	245	99	359	184	23	0	1	1 372
Kiwi fruit growing	20	8	7	0	4	0	0	0	39
Fruit growing n.e.c.	1 839	386	2 097	671	309	38	66	2	5 408
Grain growing	4 599	3 014	2 240	3 882	2 593	20	4	0	16 352
Grain-sheep/beef cattle farming	8 071	3 308	2 165	2 822	4 056	94	1	0	20 517
Sheep-beef cattle farming	3 917	2 795	925	956	568	438	0	22	9 621
Sheep farming	5 043	4 749	748	1 502	1 602	673	0	29	14 346
Beef cattle farming	9 821	7 766	10 923	1 090	1 873	1 106	218	24	32 821
Dairy cattle farming	2 031	8 064	1 825	821	460	773	0	1	13 975
Poultry farming (meat)	328	167	110	68	55	14	1	0	743
Poultry farming (eggs)	141	118	98	44	84	14	5	2	506
Pig farming	327	192	376	145	111	35	1	0	1 187
Horse farming	622	401	509	101	113	55	0	2	1 803
Deer farming	59	63	39	26	15	20	0	0	222
Livestock farming n.e.c.	661	464	317	142	114	54	5	2	1 759
Sugar cane growing	467	0	4 555	0	1	0	0	0	5 023
Cotton growing	497	0	469	0	0	0	0	0	966
Crop and plant growing n.e.c.	233	375	474	111	56	73	10	0	1 332
Total agriculture	41 869	35 995	30 424	15 458	13 553	4 384	352	94	142 129
Services to agriculture; hunting and trapping	82	61	36	46	41	11	0	0	277
Forestry and logging	13	2	8	0	4	16	0	0	43
Commercial fishing	1	1	2	6	12	5	0	0	27
<i>Total establishments mainly engaged in agriculture, forestry and fishing industries</i>	<i>41 965</i>	<i>36 059</i>	<i>30 470</i>	<i>15 510</i>	<i>13 610</i>	<i>4 416</i>	<i>352</i>	<i>94</i>	<i>142 476</i>
Establishments mainly engaged in other industries, but also with some agricultural activity									
Mining	10	3	4	0	5	—	0	0	25
Manufacturing	73	46	13	41	27	5	0	0	205
Electricity, gas and water supply	0	2	0	0	0	0	0	0	2
Construction	65	71	47	29	24	19	0	0	255
Wholesale trade	69	40	25	17	14	5	0	0	170
Retail trade	37	21	29	13	10	10	1	2	123
Accommodation, cafes and restaurants	19	11	8	5	11	6	0	0	60
Transport and storage	68	92	40	48	30	20	0	0	298
Communication services	1	0	0	0	0	0	0	0	1
Finance and insurance	9	0	1	3	1	1	0	0	15
Property and business services	69	16	42	20	20	7	0	1	175
Government administration and defence	8	0	0	0	0	0	0	0	8
Education	13	0	8	2	15	5	1	1	45
Health and community services	7	2	7	1	2	0	0	0	19
Cultural and recreational services	17	16	3	5	5	2	0	1	49
Personal and other services	6	2	9	2	6	1	0	0	26
Unclassified(a)	322	275	281	121	92	36	3	4	1 134
<i>Total establishments mainly engaged in other industries, but also with some agricultural activity</i>	<i>793</i>	<i>597</i>	<i>517</i>	<i>307</i>	<i>262</i>	<i>117</i>	<i>5</i>	<i>9</i>	<i>2 610</i>
<b>Total establishments with agricultural activity</b>	<b>42 758</b>	<b>36 656</b>	<b>30 987</b>	<b>15 817</b>	<b>13 872</b>	<b>4 536</b>	<b>357</b>	<b>103</b>	<b>145 086</b>

(a) Establishments which could not be classified to an industry because they undertook no agricultural activity during the year ended 31 March 1997.

Source: AgStats (7117.0).

## Employment in agriculture

The number of people employed in agriculture has gradually increased over the past few years. In 1997, there were 403,000 persons employed in agriculture, an increase of 6% on the number in 1992. The majority of persons employed in agriculture were male (69%). More than 81% of women were married compared to 69% of men.

Table 15.4 shows the average employment in Agriculture and Services to agriculture for each of the years 1992 to 1997.

## Gross value of agricultural commodities produced

Table 15.5 shows the gross value of agricultural commodities produced for the years 1991–92 to 1996–97. The value shown is the value of recorded production at the wholesale prices realised in the principal market place.

Table 15.6 shows the indexes of the gross value of commodities produced at constant prices, which are measures of change in value after the direct effects of price changes have been eliminated.

**15.4 EMPLOYED PERSONS(a) IN AGRICULTURE AND RELATED SERVICES TO AGRICULTURE, Annual Averages**

	Married males	All males	Married females	All females	Persons
	'000	'000	'000	'000	'000
1992	179.1	261.4	96.2	117.2	<b>378.5</b>
1993	186.7	265.0	100.5	117.3	<b>382.3</b>
1994	180.5	257.6	97.5	118.7	<b>376.3</b>
1995	180.6	259.3	101.5	123.8	<b>383.0</b>
1996	185.1	272.1	99.5	122.1	<b>394.2</b>
1997	190.6	276.7	102.8	126.3	<b>403.0</b>

(a) The estimates of employed persons include persons who worked without pay for at least one hour per week in a family business or on a farm (that is, unpaid family helpers). Persons who worked in another industry and in agriculture are classified to the industry of predominant activity.

Source: Unpublished data, Labour Force Survey.



**15.5 AGRICULTURAL COMMODITIES PRODUCED, Gross Value and Index of Values(a)**

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Commodity	\$m	\$m	\$m	\$m	\$m	\$m
<b>GROSS VALUE OF COMMODITIES PRODUCED (CURRENT PRICES)</b>						
<b>Crops</b>						
Barley for grain	680.9	801.8	844.9	622.2	1 276.4	1 306.1
Oats for grain	178.3	208.8	147.9	165.8	289.4	226.7
Wheat for grain	2 097.2	2 685.5	2 866.8	2 127.2	4 304.6	4 878.0
Other cereal grains	473.3	340.1	537.5	580.2	710.6	764.8
Sugar cane cut for crushing	602.7	800.9	944.6	1 207.7	1 232.7	1 186.4
Fruit and nuts	1 304.1	1 402.9	1 316.7	1 426.3	1 506.3	1 701.2
Grapes	433.0	395.5	450.1	511.1	708.4	721.5
Vegetables	1 242.4	1 248.6	1 443.7	1 491.6	1 629.8	1 663.0
All other crops(b)	2 853.8	2 853.2	2 963.8	2 999.6	3 716.1	3 689.9
<i>Total crops</i>	<i>9 865.7</i>	<i>10 737.3</i>	<i>11 515.9</i>	<i>11 131.7</i>	<i>15 396.7</i>	<i>16 137.6</i>
<b>Livestock slaughtering and other disposals(c)</b>						
Cattle and calves(d)	3 801.9	3 839.2	4 433.5	4 213.5	3 575.9	3 390.1
Sheep and lambs	460.6	680.8	793.6	833.7	1 035.7	1 038.9
Pigs	658.6	649.5	660.5	630.6	597.8	671.1
Poultry	778.0	833.5	929.3	902.0	948.1	1 053.3
<i>Total livestock slaughtering and other disposals(e)</i>	<i>5 738.1</i>	<i>6 032.7</i>	<i>6 852.9</i>	<i>6 615.7</i>	<i>6 192.7</i>	<i>6 190.1</i>
<b>Livestock products</b>						
Wool	2 979.5	2 568.5	2 449.1	3 317.9	2 548.5	2 621.2
Milk	1 960.0	2 314.4	2 448.0	2 419.1	2 993.5	2 808.9
Eggs	278.1	286.5	233.9	230.6	266.7	274.9
<i>Total livestock products(f)(g)</i>	<i>5 244.0</i>	<i>5 207.5</i>	<i>5 166.7</i>	<i>5 993.7</i>	<i>5 851.4</i>	<i>5 753.6</i>
<b>Total value of agricultural commodities produced(h)</b>	<b>20 861.3</b>	<b>21 990.6</b>	<b>23 547.2</b>	<b>23 750.3</b>	<b>27 451.9</b>	<b>28 089.7</b>
<b>INDEX OF GROSS VALUE OF COMMODITIES PRODUCED (CONSTANT PRICES)</b>						
<b>Crops</b>						
Barley for grain	112.0	133.5	164.9	72.0	144.0	165.6
Oats for grain	103.0	118.1	100.4	56.3	114.3	100.8
Wheat for grain	72.9	101.9	113.9	61.5	115.4	160.0
Other cereal grains	137.9	85.7	116.6	110.6	138.9	146.8
Sugar cane(i)	83.1	108.9	116.5	122.3	130.1	148.8
Fruit and nuts	100.3	117.1	118.8	112.6	138.2	149.2
Grapes	118.5	98.3	112.7	95.2	132.5	118.5
Vegetables	105.0	104.2	115.9	110.5	122.5	122.4
All other crops(b)	124.5	124.4	120.8	101.3	133.6	139.5
<i>Total crops</i>	<i>100.0</i>	<i>111.4</i>	<i>120.0</i>	<i>91.6</i>	<i>127.6</i>	<i>145.4</i>
<b>Livestock slaughtering and other disposals</b>						
Cattle and calves(d)	106.8	108.9	108.8	107.6	104.1	108.3
Sheep and lambs	93.2	94.5	95.6	93.7	93.6	94.3
Pigs	105.9	103.5	108.5	110.7	105.3	102.8
Poultry	107.6	109.9	119.1	119.1	122.9	126.9
<i>Total livestock slaughtering and other disposals(j)</i>	<i>105.5</i>	<i>107.0</i>	<i>108.8</i>	<i>108.1</i>	<i>105.7</i>	<i>108.7</i>
<b>Livestock products</b>						
Wool	80.4	78.2	75.5	66.6	62.2	66.5
Milk	107.5	117.1	129.1	131.1	139.2	144.1
Eggs	89.6	94.2	89.2	86.7	86.1	86.8
<i>Total livestock products(k)</i>	<i>86.8</i>	<i>87.6</i>	<i>88.2</i>	<i>81.9</i>	<i>80.6</i>	<i>84.8</i>
<b>Total agricultural commodities produced</b>	<b>97.0</b>	<b>102.4</b>	<b>106.6</b>	<b>92.5</b>	<b>106.6</b>	<b>116.2</b>

(a) Constant prices are weighted by average unit values for 1989-90. (b) Includes pastures and grasses. Excludes crops for green feed or silage. (c) Includes net exports of livestock. (d) Includes dairy cattle slaughtered. (e) Includes goat slaughtering and Tasmanian pigs and poultry. (f) Includes honey and beeswax. (g) Excludes Northern Territory milk and eggs. (h) Includes pigs, poultry, milk and eggs in the Northern Territory. (i) Sugar cane cut for crushing and planting. (j) Component series based on carcass weight. Includes goat slaughtering. (k) Includes honey, beeswax and goat products.

Source: *Value of Agricultural Commodities Produced, Australia (7503.0)*.

## Financial statistics of farm businesses

Estimates of selected financial aggregates of farm businesses are shown in tables 15.6 to 15.10 and graphs 15.9, 15.11 and 15.13. The estimates have been derived from the Agricultural Finance Survey, conducted annually since 1986–87.

## Turnover

Turnover (all gross proceeds received by the business during the year from the sale of crops, livestock, livestock products and other miscellaneous revenue) is a good guide to the level of farm business activity. The average turnover per farm business increased by 4% to \$256,000 during 1996–97. Aggregate turnover by farm businesses for 1996–97, however, was not significantly different from that recorded in 1995–96 (table 15.8).

**15.6 FARM BUSINESSES, Selected Financial Aggregates**

	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m
Sales from crops	7 718.3	8 594.6	9 369.5	9 804.2	13 159.6	13 581.2
Sales from livestock	4 905.3	5 431.1	6 232.5	6 279.1	6 339.7	5 964.7
Sales from livestock products	4 753.6	4 770.9	4 637.3	5 596.3	4 975.1	5 403.3
Turnover	18 576.0	20 068.2	21 694.3	23 516.3	26 724.9	27 122.3
Purchases and selected expenses	10 726.3	11 392.6	12 541.1	13 517.0	14 948.6	15 692.3
Value added(a)	8 048.2	9 099.5	10 598.4	9 768.1	11 185.3	10 797.4
Adjusted(b) value added(a)	6 737.8	7 753.3	9 178.5	8 234.3	9 552.5	9 103.2
Gross operating surplus(a)	4 885.2	5 832.7	7 081.2	6 006.0	7 176.6	6 588.3
Interest paid	1 820.4	1 499.2	1 302.0	1 508.9	1 666.7	1 719.9
Cash operating surplus(c)	3 095.0	4 083.2	4 433.3	4 835.7	6 429.3	5 906.3
Net capital expenditure	1 420.8	1 660.2	1 945.0	2 090.8	2 307.9	2 480.7
Gross indebtedness	14 819.2	15 390.5	15 921.7	18 267.7	19 592.7	20 464.2

(a) Includes an estimate for the increase (or decrease) in the value of livestock. (b) The estimate of value added less the estimates of rates and taxes, insurance payments and other expenses. (c) Excludes an estimate for the increase (or decrease) in the value of livestock.

Source: *Agricultural Industries, Financial Statistics, Australia* (7507.0).

**15.7 FARM BUSINESSES, Selected Financial Aggregates by State—1996–97**

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(a)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Sales from crops	3 826.6	1 887.9	3 587.4	1 615.0	2 365.2	290.4	<b>13 581.2</b>
Sales from livestock	1 846.9	994.4	1 732.1	483.8	609.5	139.2	<b>5 964.7</b>
Sales from livestock products	1 463.4	2 058.0	507.1	467.8	731.7	172.2	<b>5 403.3</b>
Turnover	7 711.6	5 245.9	6 456.6	2 724.2	4 084.7	701.8	<b>27 122.3</b>
Purchases and selected expenses	4 574.4	3 046.5	3 644.6	1 460.2	2 441.4	397.6	<b>15 692.3</b>
Value added(b)	3 076.9	2 103.4	2 745.8	1 158.3	1 439.1	319.6	<b>10 797.4</b>
Adjusted(c) value added(b)	2 528.5	1 812.2	2 360.6	993.3	1 198.0	272.7	<b>9 103.2</b>
Gross operating surplus(b)	1 847.2	1 308.9	1 659.8	781.0	915.7	168.1	<b>6 588.3</b>
Interest paid	496.4	305.2	443.3	184.0	230.9	51.1	<b>1 719.9</b>
Cash operating surplus(d)	1 575.1	1 159.8	1 350.6	735.5	954.2	113.7	<b>5 906.3</b>
Net capital expenditure	513.9	565.8	586.6	263.2	450.2	81.3	<b>2 480.7</b>
Gross indebtedness	5 665.3	3 413.3	5 606.8	2 088.3	3 013.9	576.7	<b>20 464.2</b>

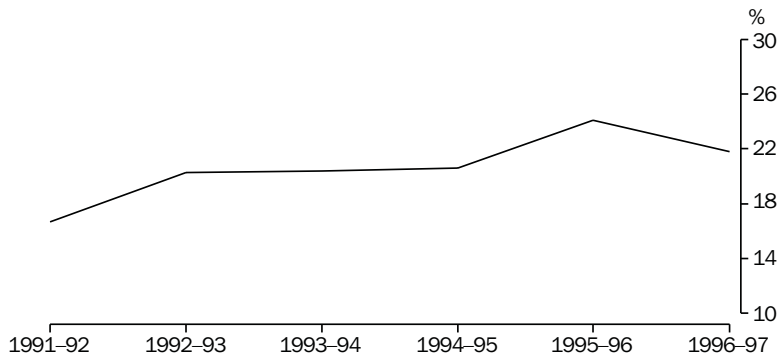
(a) Includes the Northern Territory and the Australian Capital Territory. (b) Includes an estimate for the increase (or decrease) in the value of livestock. (c) The estimate of value added less the estimates of rates and taxes, insurance payments and other expenses. (d) Excludes an estimate for the increase (or decrease) in the value of livestock.

Source: *Agricultural Industries, Financial Statistics, Australia* (7507.0).

**15.8 FARM BUSINESSES, By Size of Turnover**

Size of turnover	Number of farm businesses				Total turnover			
	1993–94	1994–95	1995–96	1996–97	1993–94	1994–95	1995–96	1996–97
	'000	'000	'000	'000	\$m	\$m	\$m	\$m
Less than \$50 000	21.4	22.8	22.7	20.4	626.4	696.1	613.6	618.6
\$50 000 to \$99 999	24.0	22.2	20.0	21.4	1 622.3	1 678.1	1 560.1	1 609.0
\$100 000 to \$149 999	19.4	17.1	15.9	13.8	2 313.5	2 142.7	1 991.0	1 787.3
\$150 000 to \$199 999	12.4	10.9	11.1	12.0	2 159.4	1 928.5	1 957.3	2 170.9
\$200 000 to \$249 999	8.5	8.4	9.2	9.7	1 808.2	1 936.6	2 053.5	2 184.8
\$250 000 to \$299 999	5.1	6.6	6.1	6.0	1 384.6	1 821.7	1 629.2	1 699.8
\$300 000 and over	16.8	19.2	23.6	22.9	11 779.9	13 312.6	16 920.2	17 051.9
<b>Total</b>	<b>107.5</b>	<b>107.3</b>	<b>108.4</b>	<b>106.1</b>	<b>21 694.3</b>	<b>23 516.3</b>	<b>26 724.9</b>	<b>27 122.3</b>

Source: Agricultural Industries, Financial Statistics, Australia (7507.0).

**15.9 AUSTRALIAN FARM BUSINESSES, Profit margins**

Source: Agricultural Industries, Financial Statistics, Australia (7507.0).

In 1996–97, 22,900 or 22% of Australian farm businesses had a turnover of \$300,000 or more and contributed 63% of the total turnover of all Australian farms. Their average turnover was \$744,600 and average cash operating surplus was \$159,900.

At the other end of the scale, 20,400 farms (19%) had a turnover of less than \$50,000. These farm businesses contributed only 2% of the total

turnover, at an average of \$30,300. These farms had an average cash operating loss of \$500 per farm.

In 1996–97, the farm business profit margin (the ratio of cash operating surplus to turnover) was 22%, a decrease from 24% in 1995–96 (graph 15.9).

## Gross indebtedness

Australian farm businesses owed a total of \$20.5b at 30 June 1997 (table 15.10), a 4% increase on 1995–96. The aggregate debt has risen steadily from \$11.5b in 1986–87 when the current series of surveys began. The average gross indebtedness at end June 1997 was \$192,900 per farm business. About 26% of farm businesses owed more than \$200,000. On the other hand, 25% of farm businesses were debt free at the end of June 1997. The total interest bill for Australian farm businesses, \$1.7b, was 3% more than in 1995–96. The average interest payment per farm business was \$16,200 in 1996–97.

Graph 15.11 shows that the average debt to asset ratio for agricultural businesses has been trending down slowly. Graph 15.12 shows a sharp drop in the average interest coverage ratio

of agricultural businesses in 1995–96 (4.9) to 1996–97 (4.4), reflecting the impact of an 8% drop in cash operating surplus and a 13% increase in interest paid.

**15.10 AUSTRALIAN FARM BUSINESSES, Aggregate and Average Gross Indebtedness**

30 June	Gross indebtedness	
	Aggregate	Average per farm business
	\$m	\$
1992	14 819.2	135 200
1993	15 390.5	145 100
1994	15 921.7	148 100
1995	18 267.7	170 300
1996	19 592.7	180 700
1997	20 464.2	192 900

Source: *Agricultural Industries, Financial Statistics, Australia (7507.0)*.

**15.11 AUSTRALIAN FARM BUSINESSES, Average Debt to Asset Ratio(a)**



(a) The debt to asset ratio is the total value of assets at 30 June divided by gross indebtedness at 30 June.

Source: *Agricultural Industries, Financial Statistics, Australia (7507.0)*.

**15.12 AUSTRALIAN FARM BUSINESSES, Average Interest Coverage Ratio(a)**



(a) The interest coverage ratio is the total of cash operating surplus and interest paid divided by interest paid at 30 June.

Source: *Agricultural Industries, Financial Statistics, Australia (7507.0)*.

## Land use

### Scope of Agricultural Census

The major source of the statistics on land use, commodity production and livestock numbers in this chapter is the Agricultural Census conducted by the ABS at 31 March each year until 1997. From 1997-98, these data will be based on the Agricultural Commodity Survey, which replaces the Agricultural Census in four out of five years.

The ABS excludes from the Census those establishments which make only a small contribution to overall agricultural activity. The cutoff, in terms of the estimated value of agricultural operations, has been adjusted over the years since 1982-83. From 1993-94, the cut-off was lowered from \$22,500 to \$5,000 to improve the overall coverage of all agricultural activity.

While this alteration has resulted in some changes in the counts of numbers of establishments engaged in agricultural activities, the effect on the statistics of production of major commodities is small. Statistics of minor commodities normally associated with small-scale operations may be affected to a greater extent. Care should be exercised when comparing data from 1993-94 onwards with those of previous years.

The Agricultural Commodity Survey is a sample survey of about 65,000 agricultural establishments.

### Land used for agriculture

In spite of Australia's harsh environment, agriculture constitutes the most extensive form of land use. At 31 March 1997, the estimated total area of agricultural establishments in Australia was 466.2 million hectares, representing about 61% of the total land area (tables 15.13 and 15.14). The remainder of the Australian land area consists of unoccupied land (mainly desert in western and central Australia), Aboriginal land reserves principally located in the Northern Territory, forests, mining leases, national parks and urban areas.

Livestock grazing accounts for the largest area of land use in Australian agriculture. This activity has led to the replacement of large areas of native vegetation with introduced pastures and grasses in the higher rainfall and irrigation areas.

At 31 March 1997, 4.5% of Australia's agricultural land was under crops with a further 4.1% under sown pastures and grasses. This maintains the trend which has seen about 10% of Australia's agricultural land cultivated each year since the 1980s. Until this time, the area of land cropped or sown to pastures and grasses had been expanding rapidly. This expansion was facilitated by factors including increased use of fertilisers, improved water supply and reduction in the rabbit population due to myxomatosis.

**15.13 AGRICULTURAL LAND UTILISATION IN AUSTRALIA**

	Area of			Total	
	Crops(a)	Sown pastures and grasses	Balance(b)	Area of establishments with agricultural activity	% of Australian land area (769 203 000 ha)
31 March	mill. ha	mill. ha	mill. ha	mill. ha	%
1992	16.4	30.8	418.8	466.0	60.6
1993	17.3	29.0	413.8	460.1	59.8
1994	18.0	29.5	421.6	469.1	61
1995	17.0	6.1	410.2	463.3	60.2
1996	19.4	17.1	428.7	465.2	60.5
1997	21.1	19.0	426.1	466.2	60.6

(a) Excludes pastures and grasses harvested for hay and seed which have been included in 'sown pastures and grasses'.

(b) Includes areas of arid or rugged land held under grazing licences but not always used for grazing, and also variable amounts of fallow land.

Source: AgStats (7117.0).

**15.14 AREA OF ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	Aust. (incl. ACT)
31 March	mill. ha	mill. ha	mill. ha	mill. ha	mill. ha	mill. ha	mill. ha	mill. ha
1992	60.4	12.4	150.0	56.9	115.7	1.8	68.7	<b>466.0</b>
1993	59.4	12.3	149.5	56.6	110.6	1.8	69.9	<b>460.1</b>
1994	61.2	13.0	152.6	57.3	114.4	2.0	68.6	<b>469.1</b>
1995	60.3	12.7	149.7	56.1	114.0	1.9	68.6	<b>463.3</b>
1996	61.0	12.8	149.7	56.9	114.5	1.9	68.3	<b>465.2</b>
1997	60.9	12.7	151.1	56.2	112.5	1.9	70.8	<b>466.2</b>

Source: AgStats (7117.0).

**Crops**

Table 15.15 shows the area of crops in the States and Territories of Australia since 1870–71, and table 15.16 is a summary of the area, production and gross value of the principal crops in Australia in recent years.

**Cereal grains**

In Australia, cereals are divided into autumn-winter-spring growing (winter cereals) and spring-summer-autumn growing (summer cereals). Winter cereals such as wheat, oats,

barley and rye are usually grown in rotation with some form of pasture such as subterranean clover, medics or lucerne. In recent years, alternative winter crops such as canola, field peas and lupins have been introduced to cereal rotation in areas where they had not previously been grown. Rice, maize and sorghum are summer cereals, with the latter being grown in association with winter cereals in some areas. In northern Australia there are two rice growing seasons.

**15.15 AREA OF CROPS**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Year	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha
1870–71	156	280	21	235	22	64	—	—	<b>868</b>
1880–81	245	627	46	846	26	57	—	—	<b>1 846</b>
1890–91	345	822	91	847	28	64	—	—	<b>2 197</b>
1900–01	990	1 260	185	959	81	91	—	—	<b>3 567</b>
1910–11	1 370	1 599	270	1 112	346	116	—	—	<b>4 813</b>
1920–21	1 807	1 817	316	1 308	730	120	—	1	<b>6 099</b>
1930–31	2 756	2 718	463	2 196	1 939	108	1	2	<b>10 184</b>
1940–41	2 580	1 808	702	1 722	1 630	103	—	2	<b>8 546</b>
1949–50	2 295	1 881	832	1 518	1 780	114	—	4	<b>8 424</b>
1959–60	2 888	1 949	1 184	1 780	2 628	130	1	3	<b>10 564</b>
1969–70	4 999	2 212	2 208	2 290	3 912	98	6	2	<b>15 728</b>
1979–80	5 243	2 243	2 334	2 771	5 281	79	2	1	<b>17 954</b>
1990–91	4 073	2 063	2 872	2 933	5 359	75	6	—	<b>17 382</b>
1991–92	3 846	2 039	2 302	2 920	5 216	76	5	—	<b>16 404</b>
1992–93	3 906	2 258	2 316	3 073	5 668	73	4	1	<b>17 297</b>
1993–94	4 209	2 317	2 394	2 940	6 100	78	5	—	<b>18 043</b>
1994–95	3 432	2 296	2 056	2 991	6 182	77	4	—	<b>17 040</b>
1995–96	4 757	2 439	2 495	3 219	6 419	75	4	—	<b>19 409</b>
1996–97	5 589	2 552	2 685	3 279	6 950	73	5	—	<b>21 133</b>

Source: AgStats (7117.0).

**15.16 SELECTED CROPS, Area, Production and Gross Value**

Crop	Area			Production			Gross value		
	1994-95	1995-96	1996-97	1994-95	1995-96	1996-97	1994-95	1995-96	1996-97
	'000 ha	'000 ha	'000 ha	'000 t	'000 t	'000 t	\$m	\$m	\$m
Cereals for grain									
Barley	2 470	3 111	3 367	2 913	5 823	6 696	622	1 276	1 306
Grain sorghum	687	770	544	1 273	1 592	1 425	242	320	257
Maize	50	56	67	242	311	398	59	69	80
Oats	897	1 136	1 052	924	1 875	1 653	166	289	227
Rice	119	137	152	1 016	966	1 255	216	226	310
Wheat	7 891	9 221	10 936	8 961	16 504	22 924	2 127	4 305	4 878
Lupins for grain	1 407	1 323	1 259	1 076	1 559	1 522	199	279	250
Crops for hay									
Oats	252	346	n.a.	745	1 370	n.a.	109	169	n.a.
Wheat	36	22	n.a.	64	62	n.a.	12	8	n.a.
Sugar cane cut for crushing	363	377	390	32 971	35 889	38 633	1 208	1 169	1 186
Tobacco	3	3	3	7	8	9	40	46	54
Seed cotton	245	315	378	796	923	1 485	851	1 003	1 342
Peanuts (in shell)	13	21	24	23	38	47	17	28	35
Soybean	18	24	39	27	45	74	11	18	31
Canola	356	377	407	264	557	623	97	208	239
Sunflower	136	82	139	112	68	143	46	25	47
Orchard fruit									
Oranges	n.a.	n.a.	n.a.	517	442	523	215	220	264
Apples	n.a.	n.a.	n.a.	317	280	353	270	305	393
Pears (excluding Nashi)	n.a.	n.a.	n.a.	152	156	168	73	91	106
Peaches	n.a.	n.a.	n.a.	59	60	72	50	50	60
Other fruit									
Bananas	8	9	10	208	220	200	255	225	217
Pineapples	3	3	3	139	128	123	43	36	39
Grapes	73	81	90	769	1 087	943	511	714	722
Vegetables									
Carrots	7	8	7	239	250	257	133	136	142
Potatoes	38	42	41	1 122	1 308	1 286	378	414	449
Tomatoes	9	9	9	340	371	393	166	176	177
<b>Total all crops (excluding pastures and grasses)</b>	<b>17 030</b>	<b>19 409</b>	<b>21 133</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>10 490</b>	<b>14 603</b>	<b>15 659</b>

Source: AgStats (7117.0); Value of Agricultural Commodities Produced, Australia (7503.0).

**Wheat**

Wheat is Australia's largest crop. It is produced in all States but primarily on the mainland in a narrow crescent known as the wheat-belt. Inland of the Great Dividing Range, the wheat-belt stretches in a curve from central Queensland through New South Wales, Victoria and southern South Australia. In Western Australia, the wheat-belt continues around the south-west of the State and some way north, along the western side of the continent (see map 15.19).

The 1997-98 volume of wheat production showed a 15% fall compared with that for the 1996-97 season (tables 15.17 and 15.18). New South Wales production was 30% lower than in 1996-97 but still seven times the drought-affected harvest in 1994-95. Production fell 31% in Victoria during 1997-98, and only by 25% in Queensland. This reduction in yields in the eastern States reflects the less favourable growing conditions of 1997-98.

**15.17 WHEAT, Area, Production and Receivals**

Year	Area(a)		Production(a)		Australian Wheat Board receivals
	For grain	All purposes(b)	Grain	Gross value	
	'000 ha	'000 ha	'000 t	\$m	'000 t
1992-93	8 275	(b)8 296	14 739	2 685	12 173
1993-94	8 383	(b)8 400	16 479	2 867	13 811
1994-95	7 891	(b)7 927	8 961	2 127	6 114
1995-96	9 221	9 243	16 504	4 305	12 807
1996-97	10 936	n.a.	22 924	4 878	20 082
1997-98p	10 311	n.a.	19 417	3 762	n.a.

(a) Area and production data relate to the year ending 31 March. (b) Excludes wheat for hay for all States except New South Wales.

Source: Value of Agricultural Commodities Produced, Australia (7503.0); AgStats (7117.0); Principal Agricultural Commodities, Australia, Preliminary, 1997-98 (7111.0); Value of Principal Agricultural Commodities Produced, Australia, Preliminary, 1997-98 (7501.0).

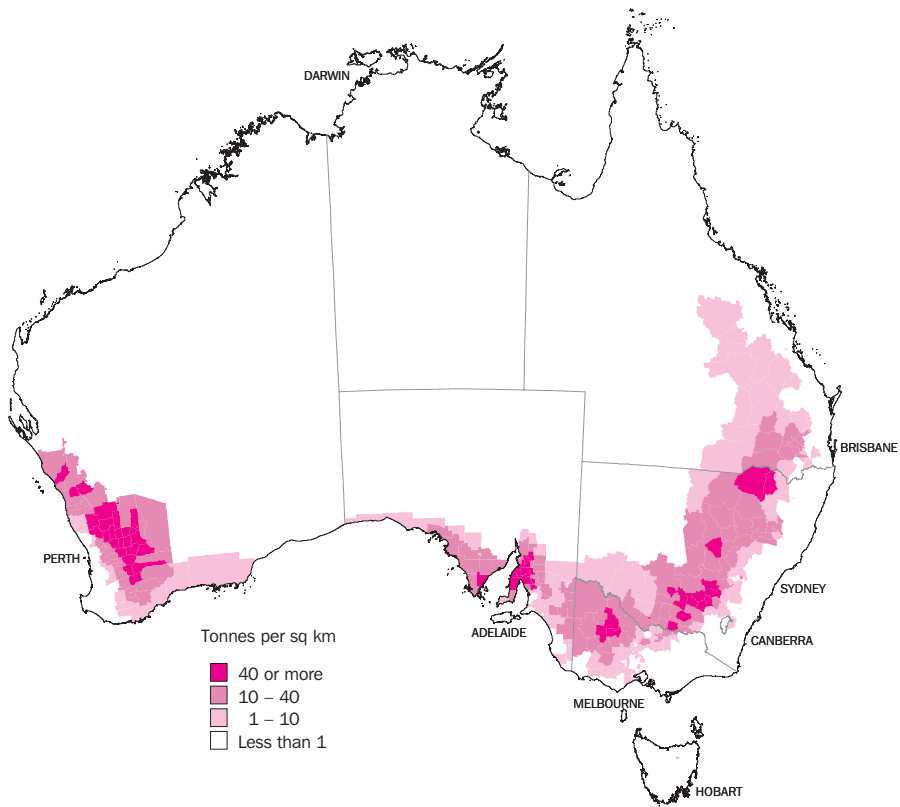
**15.18 WHEAT FOR GRAIN, Area and Production**

Year	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1992-93	1 694	821	669	1 419	3 669	1	<b>8 275</b>
1993-94	1 978	780	556	1 216	3 852	2	<b>8 383</b>
1994-95	1 424	822	401	1 395	3 848	1	<b>7 891</b>
1995-96	2 328	853	627	1 519	3 892	1	<b>9 221</b>
1996-97	3 192	963	980	1 535	4 264	2	<b>10 936</b>
1997-98p	2 840	869	1 000	1 428	4 172	2	<b>10 311</b>
PRODUCTION ('000 t)							
1992-93	3 583	2 022	735	2 421	5 979	5	<b>14 739</b>
1993-94	5 086	222	555	2 121	6 689	5	<b>16 479</b>
1994-95	875	934	225	1 487	5 438	3	<b>8 961</b>
1995-96	4 508	1 921	519	2 724	6 827	4	<b>16 504</b>
1996-97	8 363	2 262	1 980	2 795	7 516	8	<b>22 924</b>
1997-98p	5 893	1 554	1 493	2 684	7 784	9	<b>19 417</b>

Source: AgStats (7117.0); Principal Agricultural Commodities, Australia, Preliminary, 1997-98 (7111.0).



## 15.19 WHEAT FOR GRAIN, Production—1996–97



Source: Agstats (7117.0).

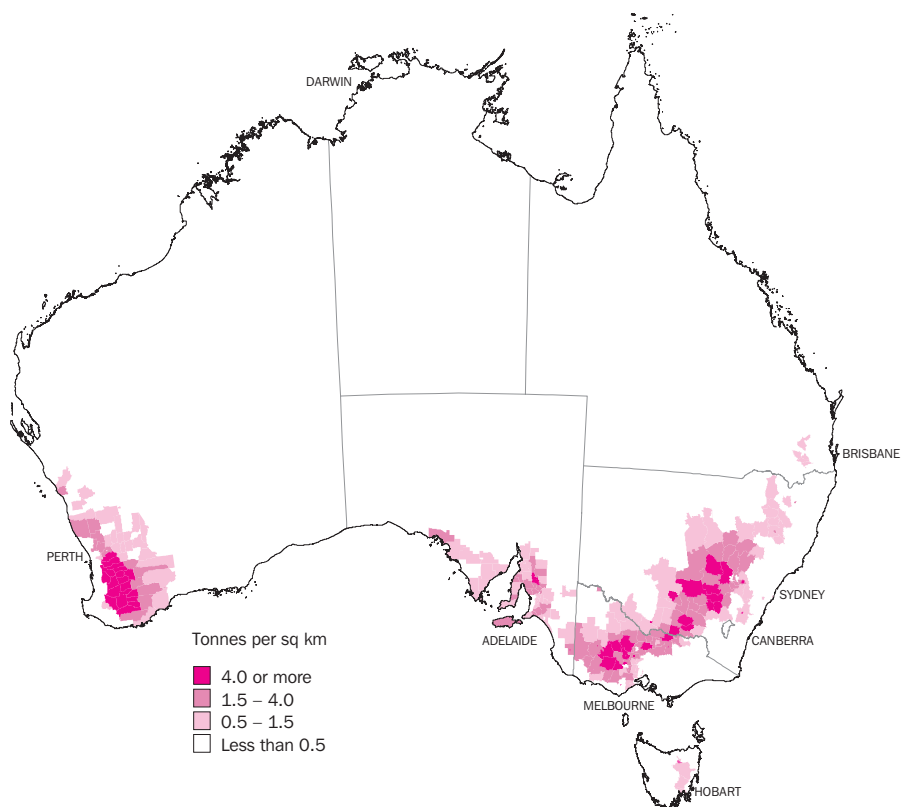
### Oats

Oats are traditionally grown in moist, temperate regions. However, improved varieties and management practices have enabled oats to be grown over a wide range of soil and climatic conditions. They have a high feed value and produce a greater bulk of growth than other winter cereals; they need less cultivation and respond well to superphosphate and nitrogen. Oats have two main uses: as a grain crop, and as a fodder crop (following sowing, or fallow or rough sowing into stubble or clover pastures). Fodder crops can either be grazed and then harvested for grain after removal of livestock, or else mown and baled or cut for chaff.

Map 15.20 shows the production of oats for grain in Australia in 1996–97.

The 1996–97 production of oats for grain fell 12% when compared with the 1995–96 harvest (table 15.21). Victoria and New South Wales showed falls of 22% and 15% respectively in 1996–97, but the levels of production for Australia are still well above those achieved in 1994–95 and on a par with production in recent pre-drought seasons. Preliminary estimates for 1997–98 showed production of oats for grain had fallen 4% from the previous year with New South Wales (down 17%) the biggest contributor to the decline.

## 15.20 OATS FOR GRAIN, Production—1996–97



Source: Agstats (7117.0).

## 15.21 OATS FOR GRAIN, Area and Production

Year	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1992–93	448	223	15	123	332	9	<b>1 149</b>
1993–94	369	186	16	101	268	7	<b>947</b>
1994–95	375	148	14	95	256	8	<b>897</b>
1995–96	505	187	14	120	300	10	<b>1 136</b>
1996–97	393	175	39	121	316	8	<b>1 052</b>
1997–98p	332	173	16	111	292	8	<b>933</b>
PRODUCTION ('000 t)							
1992–93	761	404	10	165	578	19	<b>1 937</b>
1993–94	618	362	8	135	511	13	<b>1 647</b>
1994–95	197	201	3	87	425	11	<b>924</b>
1995–96r	711	392	7	162	585	18	<b>1 875</b>
1996–97	607	304	26	156	546	14	<b>1 653</b>
1997–98p	503	329	11	151	575	15	<b>1 583</b>

Source: AgStats (7117.0); Principal Agricultural Commodities, Australia, Preliminary, 1997–98 (7111.0).

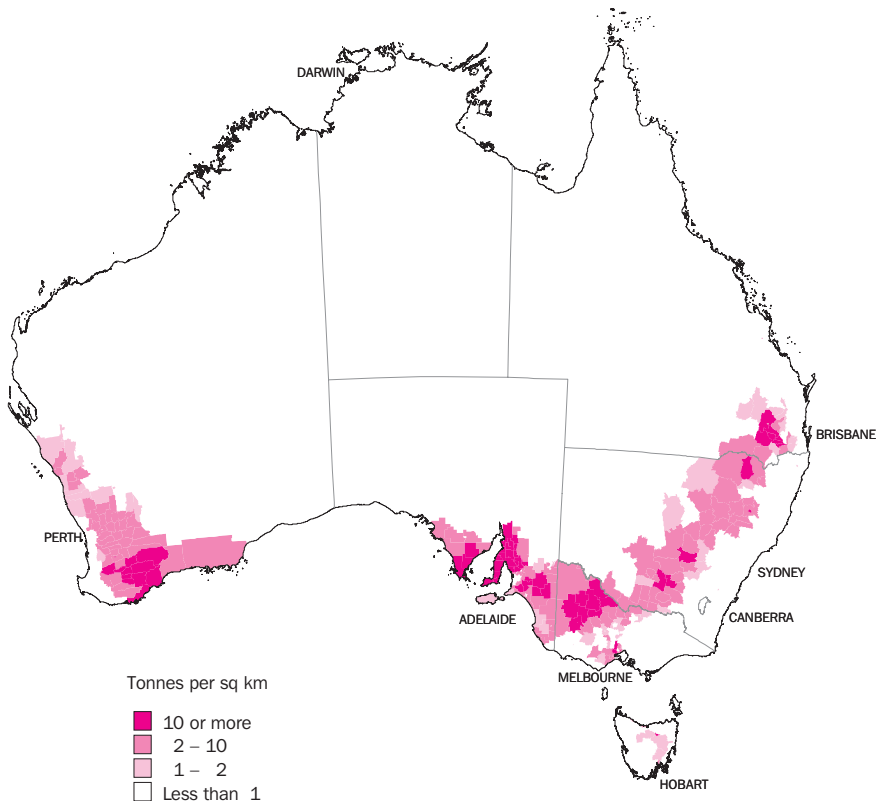
## Barley

This cereal contains two main groups of varieties, 2-row and 6-row. The former is generally, but not exclusively, preferred for malting purposes. Barley is grown principally as a grain crop, although in some areas it is used as a fodder crop for grazing, with grain being subsequently harvested if conditions are suitable. It is often grown as a rotation crop with wheat, oats and pasture. When sown for fodder, sowing may take place either early or late in the season, as barley has a short growing period. It may

therefore provide grazing or fodder supplies when other sources are not available. Barley grain may be crushed to meal for stock or sold for malting. Map 15.22 shows the production of barley for grain in Australia in 1996–97.

Barley production levels in 1996–97 held in most States from the previous season (table 15.23), and have returned to the levels prior to the drought affected 1994–95 season. Preliminary estimates for 1997–98 showed production had declined by 4% due to lower yields in the eastern States.

**15.22 BARLEY FOR GRAIN, Production—1996–97**



Source: Agstats (7117.0).

**15.23 BARLEY FOR GRAIN, Area and Production**

Year	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1992-93	560	551	189	1 023	611	12	<b>2 947</b>
1993-94	623	639	232	1 115	799	15	<b>3 424</b>
1994-95	410	492	93	882	579	14	<b>2 470</b>
1995-96	593	628	168	964	745	14	<b>3 111</b>
1996-97	668	585	180	1 009	909	15	<b>3 367</b>
1997-98p	648	629	152	1 014	1 000	12	<b>3 455</b>
PRODUCTION ('000 t)							
1992-93	1 044	1 116	285	1 855	1 061	35	<b>5 397</b>
1993-94	1 357	1 386	261	2 242	1 381	41	<b>6 668</b>
1994-95	291	448	73	1 159	915	27	<b>2 913</b>
1995-96	1 074	1 342	195	1 851	1 323	38	<b>6 668</b>
1996-97	1 483	1 189	429	1 923	1 635	35	<b>6 696</b>
1997-98p	1 314	953	245	2 041	1 844	30	<b>6 429</b>

Source: AgStats (7117.0); Principal Agricultural Commodities, Australia, Preliminary, 1997-98 (7111.0).

**Grain sorghum**

The sorghums are summer growing crops which are used in a number of ways: grain sorghum for grain; sweet or fodder sorghum, sudan grass and, more recently, columbus grass for silage, green feed and grazing; and broom millet for brooms and brushware.

Grain sorghum has been grown extensively only in the last two decades, with Queensland producing around 70% of the harvest (table 15.24). Rapid increases in production have resulted in a substantial increase in exports over this period. The grain is used primarily as stockfeed and is an important source for supplementing other coarse grains for this purpose.

**15.24 GRAIN SORGHUM, Area and Production**

Year	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(a)
AREA ('000 ha)							
1991-92	147	—	420	(b)	—	(b)	<b>569</b>
1992-93	118	—	308	—	—	—	<b>427</b>
1993-94	99	—	399	(b)	—	—	<b>499</b>
1994-95	161	6	519	(b)	—	(b)	<b>687</b>
1995-96	171	2	597	(b)	—	(b)	<b>770</b>
1996-97	117	1	424	—	1	(b)	<b>544</b>
PRODUCTION ('000 t)							
1991-92	398	—	1 045	(b)	—	(b)	<b>1 447</b>
1992-93	229	—	315	—	2	—	<b>548</b>
1993-94	228	—	852	(b)	—	(b)	<b>1 084</b>
1994-95	347	8	916	(b)	2	(b)	<b>1 273</b>
1995-96	472	4	1 116	(b)	0	(b)	<b>1 592</b>
1996-97	417	3	1 003	—	2	(b)	<b>1 425</b>

(a) Includes the Northern Territory. (b) Not collected.

Source: AgStats (7117.0).

**15.25 MAIZE FOR GRAIN, Area and Production**

Year	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(a)
AREA ('000 ha)							
1991–92	17	—	34	(b)	1	(b)	<b>52</b>
1992–93	16	—	27	(b)	2	(b)	<b>45</b>
1993–94	14	—	28	(b)	2	(b)	<b>44</b>
1994–95	21	1	27	(b)	2	(b)	<b>50</b>
1995–96	24	1	31	(b)	—	(b)	<b>56</b>
1996–97	31	1	34	—	1	—	<b>67</b>
PRODUCTION ('000 t)							
1991–92	119	3	141	(b)	5	(b)	<b>269</b>
1992–93	108	3	75	(b)	13	(b)	<b>199</b>
1993–94	100	2	87	(b)	15	(b)	<b>204</b>
1994–95	145	5	80	(b)	11	(b)	<b>242</b>
1995–96	190	7	114	(b)	1	(b)	<b>311</b>
1996–97	256	7	130	—	5	—	<b>398</b>

(a) Includes the Northern Territory. (b) Not collected.

Source: AgStats (7117.0).

**Maize**

Like sorghum, maize is a summer cereal demanding specific soil and climatic conditions. Maize for grain is almost entirely confined to the south-east regions and the Atherton Tablelands of Queensland; and the north coast, northern slopes and tablelands and the Murrumbidgee Irrigation Area in New South Wales. Small amounts are grown in all States, except South Australia, for green feed and silage, particularly in association with the dairy industry.

In 1996–97, maize for grain production rose 28% (table 15.25).

**Rice**

Rice was first grown commercially in 1924–25 in the Murrumbidgee Irrigation Area, one of three irrigation areas in southern New South Wales where rice is now produced. Nearly all of Australia's rice is grown in New South Wales.

The rice harvest in 1996–97 shows a 30% increase in production over 1995–96 (table 15.26).

**15.26 RICE FOR GRAIN, Area and Production**

Year	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(a)
AREA ('000 ha)							
1991–92	109	(b)	4	(b)	(b)	(b)	<b>114</b>
1992–93	105	(b)	2	(b)	(b)	(b)	<b>106</b>
1993–94	125	(b)	(b)	(b)	(b)	(b)	<b>125</b>
1994–95	119	(b)	(b)	(b)	(b)	(b)	<b>119</b>
1995–96	136	(b)	(b)	(b)	(b)	(b)	<b>137</b>
1996–97	151	1	(b)	(b)	(b)	(b)	<b>152</b>
PRODUCTION ('000 t)							
1991–92	929	(b)	28	(b)	(b)	(b)	<b>957</b>
1992–93	846	(b)	12	(b)	(b)	(b)	<b>858</b>
1993–94	1 042	(b)	(b)	(b)	(b)	(b)	<b>1 042</b>
1994–95	1 016	(b)	(b)	(b)	(b)	(b)	<b>1 016</b>
1995–96	965	(b)	(b)	(b)	(b)	(b)	<b>966</b>
1996–97	1 248	6	(b)	(b)	(b)	(b)	<b>1 255</b>

(a) Includes the Northern Territory. (b) Not collected.

Source: AgStats (7117.0).

## Vegetables

The area sown to vegetables reached a peak of over 200,000 hectares in 1945. It remained static at around 109,000 hectares from the mid-1970s to the mid-1980s, then increased toward the end of the decade, peaking in 1995–96 (table 15.27). Yields from most vegetable crops have continued

to increase due to development of genetically improved varieties for increased yields, greater use of irrigation and better control of disease and insect pests.

In 1996–97, potatoes were the largest vegetable crop in terms of both area and production (tables 15.27 and 15.28).

### 15.27 SELECTED VEGETABLES FOR HUMAN CONSUMPTION, Area

Year	French and runner beans '000 ha	Cabbages '000 ha	Carrots '000 ha	Cauliflowers '000 ha	Onions '000 ha	Green peas '000 ha	Potatoes(a) '000 ha	Tomatoes '000 ha	Other '000 ha	Total vegetables '000 ha
1991–92	6.8	2.3	4.7	3.6	5.4	8.9	39.8	9.0	35.4	<b>117.5</b>
1992–93	6.7	2.1	4.9	4.0	4.4	9.2	38.8	8.6	39.0	<b>117.7</b>
1993–94	6.5	2.0	5.4	3.7	5.2	10.5	40.3	8.9	42.8	<b>125.3</b>
1994–95	6.1	2.1	6.9	3.7	5.2	9.8	37.6	8.7	49.0	<b>129.1</b>
1995–96	7.1	2.2	7.6	4.0	5.5	8.2	41.8	8.6	46.9	<b>131.4</b>
1996–97	7.9	1.9	7	4.0	4.8	9.3	41.1	8.8	44.9	<b>129.7</b>

(a) Excludes potatoes for seed.

Source: AgStats (7117.0).

### 15.28 SELECTED VEGETABLES FOR HUMAN CONSUMPTION, Production

Year	French and runner beans '000 t	Cabbages '000 t	Carrots '000 t	Cauliflowers '000 t	Onions '000 t	Green peas (pod weight) '000 t	Potatoes(a) '000 t	Tomatoes '000 t
1990–91	29.9	76.8	152.1	90.3	222.3	91.5	1 136.2	364.1
1991–92	32.5	78.6	158.3	78.3	220.5	83.5	1 150.1	330.5
1992–93	32.0	69.5	169.5	80.2	167.9	79.6	1 129.2	290.8
1993–94	31.0	64.5	194.8	75.2	213.2	97.2	1 184.7	327.2
1994–95	29.4	70.8	238.5	66.1	200.4	97.9	1 122.4	340.0
1995–96	32.0	69.4	249.9	71.1	244.5	80.8	1 308.1	370.9
1996–97	37.6	60.4	257.4	64.4	196.5	94.2	1 286.1	393.1

(a) Excludes potatoes for seed.

Source: AgStats (7117.0).

### Fruit (excluding grapes)

A wide variety of fruit is grown in Australia, ranging from pineapples, mangoes and pawpaws in the tropics to pome, stone and berry fruits in temperate regions. Table 15.29 shows the number of trees for the main types of orchard fruit, and the area under cultivation for bananas and pineapples.

The principal fruit crops in Australia are apples, oranges and bananas. However, some other fruit types have experienced considerable growth in recent years. These include mandarins, kiwi fruit and strawberries. The most significant crops in terms of gross value of production are apples, oranges and bananas. In 1996–97, the value of the banana crop fell by 4%, while the value of the orange crop rose by 20% and that of the apple crop rose by 29% (table 15.30).

**15.29 SELECTED FRUIT, Number of Trees(a) and Area**

Year	Orchard fruit				Area of selected tropical fruits		Total area of fruit (excluding grapes)
	Apples	Oranges	Pears	Peaches	Bananas	Pineapples	
	'000 trees	'000 trees	'000 trees	'000 trees	ha	ha	ha
1991–92	7 206	7 536	1 645	2 123	9 913	5 745	<b>116 702</b>
1992–93	7 321	7 797	1 531	2 214	10 520	5 854	<b>123 066</b>
1993–94	7 777	8 062	1 610	2 502	10 687	5 870	<b>132 419</b>
1994–95	7 989	7 684	1 508	2 396	9 807	5 225	<b>128 258</b>
1995–96	8 543	7 701	1 543	2 571	10 815	4 697	<b>133 461</b>
1996–97	9 282	7 827	1 576	2 975	11 613	4 634	<b>137 086</b>

(a) Includes trees less than six years old.

Source: AgStats (7117.0).

**15.30 SELECTED FRUIT, Production and Value of Production**

Year	Apples	Apricots	Bananas	Cherries	Oranges	Peaches	Pears(a)	Pineapples	Plums and prunes
PRODUCTION ('000 t)									
1990–91	288.7	25.2	165.1	5.4	453.3	57.9	156.7	126.0	19.6
1991–92	316.1	31.8	176.9	4.8	469.9	61.7	175.7	133.3	21.6
1992–93	327.8	29.5	213.9	5.0	616.5	62.6	161.4	142.4	25.0
1993–94	306.9	21.2	219.2	6.4	582.1	59.4	155.2	157.4	26.1
1994–95	316.6	29.8	208.1	5.8	517.2	58.7	151.7	138.5	21.3
1995–96	280.0	21.6	220.0	4.8	442.1	60.4	156.0	127.9	21.4
1996–97	353.1	25.9	199.6	6.7	522.6	72.1	167.6	123.0	25.2
GROSS VALUE OF PRODUCTION (\$m)									
1990–91	182.6	23.6	235.2	19.7	164.6	44.0	83.6	37.3	26.3
1991–92	269.4	33.5	270.0	20.2	202.8	49.0	127.1	39.0	29.9
1992–93	263.4	30.6	299.8	19.2	212.1	49.7	103.0	41.8	37.5
1993–94	237.6	27.1	203.3	27.0	230.0	53.2	89.0	45.2	37.2
1994–95	269.8	28.8	254.7	27.2	214.8	50.0	73.4	43.3	31.9
1995–96	305.3	30.7	224.9	22.7	219.5	50.3	90.7	36.4	33.4
1996–97	393.4	42.4	216.6	34.0	263.6	60.1	106.1	39.3	38.6

(a) Excludes Nashi.

Source: AgStats (7117.0); Value of Agricultural Commodities Produced, Australia (7503.0).

## Grapes

Grapes are a temperate crop which requires warm to hot summer conditions for ripening and predominantly winter rainfall. Freedom from late spring frosts is essential. They are grown for wine-making, drying and, to a lesser extent, for table use (see tables 15.31 and 15.32). Some of the better known wine producing areas are the

Barossa, Clare, Riverland, Southern Districts and Coonawarra (South Australia); north-eastern Victoria and Great Western (Victoria); Hunter and Riverina (New South Wales); Sunraysia (New South Wales and Victoria); and Swan Valley and Margaret River (Western Australia).

The gross value of grape production for 1996–97 increased marginally to \$721.5m (table 15.31).

### 15.31 VITICULTURE, Area, Production and Value

Year	Area		Production of grapes(a) used for		Total production(b)	
	Bearing	Total	Winemaking	Drying	Quantity	Gross value
	'000 ha	'000 ha	'000 t fresh weight	'000 t fresh weight	'000 t fresh weight	\$m
1991–92	56	61	565	373	987	433.0
1992–93	58	63	545	197	793	377.6
1993–94	61	67	662	213	920	450.1
1994–95	63	73	578	147	769	511.1
1995–96	65	81	782	248	1 087	714.3
1996–97	72	90	743	136	943	721.5

(a) Excludes the Northern Territory and the Australian Capital Territory. (b) Includes grapes used for table and other purposes.

Source: Value of Agricultural Commodities Produced, Australia (7503.0).

### 15.32 VITICULTURE, Area and Production—1997 Season

Variety	Area of vines at harvest			Production of grapes used for(a)			
	Bearing	Not yet bearing	All vines	Winemaking(a)	Drying	Other	Total
	ha	ha	ha	tonnes fresh weight	tonnes fresh weight	tonnes fresh weight	tonnes fresh weight
<b>Red grapes</b>							
Cabernet Sauvignon	7 989	3 550	11 539	67 990	21	16	<b>68 026</b>
Currant (including Carina)	1 095	69	1 164	4 535	10 742	49	<b>15 327</b>
Grenache	1 893	119	2 011	24 137	23	23	<b>24 183</b>
Mataro	557	62	619	7 676	41	22	<b>7 740</b>
Pinot Noir	1 597	341	1 938	14 172	—	—	<b>14 172</b>
Shiraz	9 293	4 431	13 724	96 330	—	35	<b>96 365</b>
Other red grapes	5 365	2 155	7 521	40 695	560	18 409	<b>59 664</b>
Total red grapes	27 789	10 727	38 515	255 535	11 387	18 554	<b>285 476</b>
<b>White grapes</b>							
Chardonnay	10 589	3 442	14 031	120 228	—	663	<b>120 891</b>
Doradillo	455	18	473	10 668	—	2	<b>10 670</b>
Muscat Gordo Blanco	3 162	250	3 411	65 584	4 913	304	<b>70 801</b>
Palomino and Pedro Ximenes	482	25	507	7 261	—	3	<b>7 264</b>
Rhine Riesling	3 303	144	3 447	33 512	42	4	<b>33 558</b>
Semillon	3 757	1 090	4 847	53 097	—	3	<b>53 100</b>
Sultana	14 645	638	15 283	98 653	116 401	30 390	<b>245 443</b>
Waltham Cross	509	12	521	1 981	2 925	1 578	<b>6 484</b>
Other white grapes	7 428	1 332	8 760	96 863	767	11 795	<b>109 425</b>
Total white grapes	44 330	6 951	51 280	487 847	125 048	44 742	<b>657 637</b>
<b>Total grapes</b>	<b>72 119</b>	<b>17 678</b>	<b>89 797</b>	<b>743 382</b>	<b>136 485</b>	<b>63 296</b>	<b>943 113</b>

(a) Excludes the Northern Territory and the Australian Capital Territory, where varietal data are not collected.

Source: AgStats (7117.0).



## Selected other crops

### Oilseeds

The oilseeds industry is a relatively young industry by Australian agricultural standards. The specialist oilseed crops grown in Australia are sunflower, soybeans, canola, safflower and linseed. Sunflower and soybeans are summer grown while the others are winter crops. In Australia, oilseeds are crushed for their oil, which is used for edible and industrial purposes, and protein meals for livestock feeds.

While oilseed crops are grown in all States, the largest producing regions have been the grain growing areas of the eastern States. The last 12 years have seen a rapid rise in the popularity of canola, with production in 1996–97 of 623,000 tonnes compared to only 32,000 in 1984–85. Significant increases in production of soybean and sunflower crops were also recorded for 1996–97. Australian production of oilseeds reached 864,000 tonnes in 1996–97, an increase of 167,000 tonnes over 1995–96 production. The biggest contributions to the increase came from New South Wales (93,000 tonnes) and Queensland (74,000 tonnes).

### 15.33 OILSEEDS, Area and Production

Year	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1990–91	134	23	135	7	2	—	<b>302</b>
1991–92	155	47	71	15	17	—	<b>305</b>
1992–93	119	37	50	14	12	—	<b>232</b>
1993–94	177	66	88	24	37	—	<b>392</b>
1994–95(a)	217	95	92	33	104	—	<b>540</b>
1995–96(a)	227	105	57	35	99	—	<b>522</b>
1996–97(b)	247	115	112	42	107	—	<b>622</b>
PRODUCTION ('000 t)							
1990–91	169	21	124	9	2	—	<b>325</b>
1991–92	191	44	78	19	16	—	<b>348</b>
1992–93	198	41	36	16	12	—	<b>304</b>
1993–94	301	83	82	32	48	—	<b>545</b>
1994–95(a)	147	69	64	30	108	—	<b>417</b>
1995–96(a)	339	143	46	51	117	—	<b>697</b>
1996–97(b)	432	147	120	57	108	—	<b>864</b>

(a) Excludes linseed. (b) Excludes peanuts and cotton seed.

Source: AgStats (7117.0).

**15.34 COTTON, Area, Production and Exports**

Year	Seed cotton(a)			Raw cotton exports			
	Area	Quantity	Gross value	Cottonseed(b)	Lint(b)	Quantity	Value f.o.b.
	'000 ha	'000 t	\$m	'000 t	'000 t	'000 t	\$m
1990-91	279	1 129	898	686	433	319	689
1991-92	312	1 278	879	724	502	458	945
1992-93	287	1 000	706	528	373	395	753
1993-94	293	788	652	466	329	360	732
1994-95	245	796	851	474	335	297	679
1995-96	315	923	1 003	595	421	311	762
1996-97	378	1 485	1 342	860	608	505	1 077

(a) Before ginning. (b) Estimated by the Australian Bureau of Agricultural and Resource Economics (ABARE), and the ABS Foreign Trade Section.

Source: ABARE, *Australian Commodities Forecasts and Issues, 1997*; *Value of Agricultural Commodities Produced, Australia* (7503.0); AgStats (7117.0).

**Cotton**

Cotton is grown in New South Wales and Queensland, primarily for its fibre (lint). When the cotton is matured, seed cotton is taken to a gin where it is separated (ginned) into lint and seed. Lint is used for yarn while seed is further processed at an oil mill. There the short fibres (linters) remaining on the seed after ginning are removed. They are too short to make into cloth but are used for wadding, upholstery and paper. The seeds are then separated into kernels and hulls. Hulls are used for stock feed and as fertiliser, while kernels are crushed to extract oil. The oilcake residue (crushed kernels) is ground into meal which is a protein roughage also used as stock feed.

The quantity and value of seed cotton production have risen significantly over the past two years (table 15.34). The yield has increased from 2.9 tonnes per hectare in 1995-96 to 3.9 tonnes per hectare in 1996-97, the highest since 1991-92.

**Sugar**

Sugar cane is grown commercially in Australia along the east coast over a distance of some 2,100 km, in a number of discontinuous areas from Maclean in northern New South Wales to Mossman in Queensland. The geographical spread contributes to the overall reliability of the sugar cane crop and to Australia's record as a reliable sugar supplier.

About 95% of production occurs in Queensland (table 15.35), with some 75% of the crop grown north of the Tropic of Capricorn in areas where rainfall is reliable and the warm, moist and sunny conditions are ideal for growing sugar cane. Farm sizes generally range between 20 and 70 hectares.

**15.35 SUGAR CANE, Area, Production and Yield**

Year	New South Wales						Queensland				
	Sugar cane cut for crushing			Raw sugar		Sugar cane cut for crushing			Raw sugar		
	Area harvested	Production	Yield	Quantity	Yield	Area harvested	Production	Yield	Quantity	Yield	
	'000 ha	'000t	t/ha	'000t	t/ha	'000 ha	'000t	t/ha	'000t	t/ha	
1991-92	15	1 416	93.7	180	12.0	314	19 225	61.2	2 931	9.3	
1992-93	16	1 667	107.3	240	15.0	312	26 292	84.2	4 016	12.9	
1993-94	15	1 674	112.7	218	14.5	323	29 638	91.8	4 082	12.6	
1994-95	16	1 825	111.2	242	15.1	347	31 146	89.8	4 821	13.8	
1995-96	18	1 923	107.8	237	12.9	359	33 898	94.6	4 596	12.6	
1996-97	18	2 231	124.0	276	14.9	371	36 232	97.6	4 991	13.1	

Source: AgStats (7117.0); ABARE: *Australian Commodities Forecasts and Issues, 1997*.

### Fodder crops

Considerable areas of Australia are devoted to fodder crops, which are either used for grazing (as green feed) or harvested and conserved as hay and silage, etc (table 15.36).

The development of fodder conservation as a means of supplementing pasture and natural sources of stockfeed is the result of the seasonal and comparatively unreliable nature of rainfall in Australian agricultural areas.

**15.36 FODDER CROPS, Area and Production**

Year	Hay(a)			Green feed or silage(b)	
	Area	Quantity	Production	Area	Silage made
			Gross value		
	'000 ha	'000 t	\$m	'000 ha	'000 t
1990–91	(c)336	(c)1 068	(c)112.3	(d)787	(d)574
1991–92	(c)450	(c)1 480	(c)159.0	(d)759	(d)687
1992–93	(c)324	(c)1 220	(c)119.2	(d)712	(d)883
1993–94	321	1 227	136.3	707	1 142
1994–95	484	1 074	158.1	n.a.	n.a.
1995–96	531	1 965	237.1	1 000	n.a.
1996–97	362	1 329	154.9	n.a.	1 686

(a) Principally oaten and wheaten hay. (b) Principally from oats, barley, wheat and forage sorghum. (c) Excludes wheat for hay for all States except New South Wales. (d) Excludes oats for New South Wales, Victoria, Tasmania and the Northern Territory.

Source: AgStats (7117.0).

## Livestock

The numbers of each of the principal categories of livestock in Australia are shown in table 15.37 at 10-yearly intervals from 1861 to 1991, and then yearly.

**15.37 LIVESTOCK**

	Cattle	Sheep and lambs	Pigs
31 March	'000	'000	'000
1861	3 958	20 135	351
1871	4 276	41 594	543
1881	7 527	62 184	816
1891	10 300	97 881	891
1901	8 640	70 603	950
1911	11 745	98 066	1 026
1921	13 500	81 796	674
1931	11 721	110 568	1 072
1941	13 256	122 694	1 797
1951	15 229	115 596	1 134
1961	17 332	152 579	1 615
1971	24 373	177 792	2 590
1981	25 168	134 407	2 430
1991	(a)23 662	163 238	2 531
1992	(a)23 880	148 203	2 570
1993	(a)24 062	138 099	2 646
1994	(a)25 758	132 569	2 775
1995	(a)25 731	120 862	2 653
1996	(a)26 377	121 116	2 526
1997	(a)26 780	120 228	2 555
1998p	(a)26 710	119 579	2 680

(a) Excluding house cows and heifers.

Source: AgStats (7117.0); *Principal Agricultural Commodities, Australia, Preliminary, 1997–98* (7111.0).

## Cattle

Cattle farming is carried out in all States. While dairy cattle are restricted mainly to southern and coastal districts, beef cattle are more concentrated in Queensland and New South Wales. Table 15.38 shows the number of cattle by age, sex and purpose.

Cattle numbers in Australia increased slowly during the 1960s and 1970s, despite seasonal changes and heavy slaughterings, to a peak of 33.4 million in 1976. Beef cattle production is often combined with cropping, dairying and sheep. In the northern half of Australia, cattle properties and herd sizes are very large, pastures are generally unimproved, fodder crops are rare and beef is usually the only product. The industry is more intensive in the south because of the more favourable environment including more improved pasture (see map 15.40).

Drought conditions in the early 1980s led to a decline in the beef herd until 1984. For the next five years, the size of the herd remained relatively static. Since 1989, cattle numbers have gradually increased despite unfavourable weather conditions continuing in many parts of Australia. Table 15.39 shows the number of cattle by State/Territory.

**15.38 CATTLE, By Age, Sex and Purpose—As at 31 March**

	1993	1994	1995r	1996r	1997	1998p
	'000	'000	'000	'000	'000	'000
Milk cattle						
Bulls used or intended for service	31	36	(a)	(a)	(a)	(a)
Cows (in milk and dry)	1 697	1 786	1 821	1 884	1 977	2 002
House cows and heifers	776	856	(a)	(a)	(a)	(a)
Total	2 504	2 678	2 740	2 808	2 958	3 004
Meat cattle						
Bulls used or intended for service	526	557	555	553	553	533
Cows and heifers (1 year and over)	11 171	12 076	11 213	11 667	11 931	11 803
Calves under 1 year	5 064	5 388	5 806	5 768	6 047	6 139
Other cattle (1 year and over)	4 795	5 058	5 418	5 581	5 291	5 230
Total	21 555	23 080	22 991	23 569	23 822	23 706
<b>Total all cattle(b)</b>	<b>24 062</b>	<b>25 758</b>	<b>25 731</b>	<b>26 377</b>	<b>26 780</b>	<b>26 710</b>

(a) Not collected. (b) Excluding house cows and heifers.

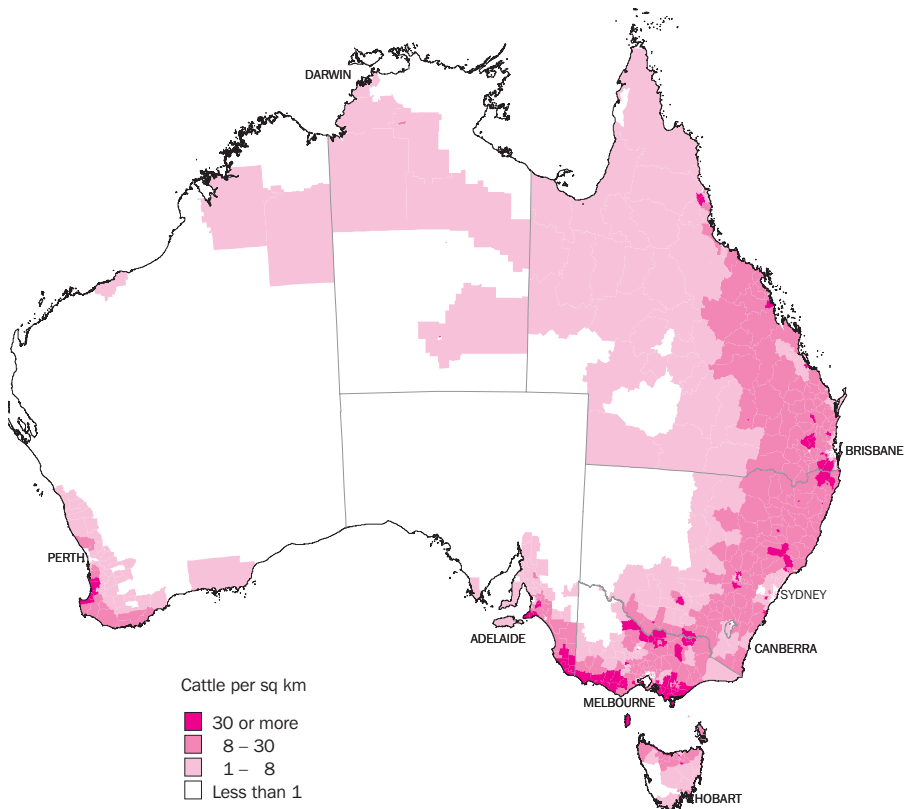
Source: AgStats (7117.0); *Principal Agricultural Commodities, Australia, Preliminary, 1997–98* (7111.0).

**15.39 CATTLE, By State/Territory(a)**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	Aust.(b)
Year	'000	'000	'000	'000	'000	'000	'000	'000
1993	5 783	3 689	9 873	1 104	1 648	605	1 347	<b>24 062</b>
1994	6 515	4 189	9 942	1 202	1 806	679	1 435	<b>25 758</b>
1995	6 236	4 280	9 974	1 216	1 899	693	1 421	<b>25 731</b>
1996	6 390	4 396	10 214	1 219	1 924	718	1 503	<b>26 377</b>
1997	6 511	4 411	10 422	1 181	1 909	725	1 609	<b>26 780</b>
1998p	6 172	4 196	10 723	1 233	1 994	735	1 647	<b>26 710</b>

(a) Excluding house cows and heifers. (b) Includes the Australian Capital Territory.

Source: AgStats (7117.0); *Principal Agricultural Commodities, Australia, Preliminary, 1997–98* (7111.0).

**15.40 CATTLE FOR ALL PURPOSES, Excluding House Cows—31 March 1997**

Source: Agstats (7117.0).

## Dairying

Dairying is a major Australian agricultural industry, ranking fourth behind the wheat, wool and beef industries in terms of value of production. The preliminary estimate of the gross value of dairy production at farm gate prices in 1997–98 was \$2,815m (table 15.42), 10% of the gross value of production. The gross value of this industry at an ex-factory level has been about \$7,000m per year. The industry is also one of Australia's leading agricultural industries in terms of the downstream employment and processing it generates. Employment at related manufacturing, processing and farm establishments in 1997–98 was nearly 55,000 people.

The entry of the United Kingdom, Australia's then largest market, into the European Union in 1973 forced the Australian dairy industry to become more internationally competitive and to develop new export trade links. This emphasis was reinforced with the introduction of the Kerin Plan on 1 July 1986, which directly linked domestic product prices to international market returns. Around 50% of Australian milk production is now exported in manufactured forms, with just under 80% of these sales destined for markets in Asia and the Middle East.

## Dairy production

There are areas in Australia where climate and natural resources are favourable to dairying and allow production to be based on year-round pasture grazing. This encourages efficient, low cost milk production. With the exception of several inland river schemes, pasture growth generally depends on natural rainfall. Most non-irrigated dairy production is located in coastal fringe areas. Feedlot based dairying remains uncommon in Australia, although the use of supplementary feed, such as grains, has become more common in recent years.

While seasonal conditions continue to have some influence on yearly output, Australian milk production has risen steadily over the past seven years and in 1997–98 was 9,440 million litres (table 15.42), an increase of 4% compared with the previous year. This largely reflected productivity gains through a combination of farm and herd management techniques. Table 15.41 shows the number of milk cattle over recent years. The preliminary 1997–98 figure of 4,715 litres for average production per dairy cow was around a third higher than the levels of the mid 1980s.

## Dairy domestic market

Average annual per capita milk consumption by Australians has stabilised at around 100 litres since the mid-1980s. However, there have been substantial changes in the types of fresh milk consumed, with fat reduced and modified milks taking an increasing share of overall market milk sales.

In 1996–97, Australians consumed 10.7 kg of cheese per person, 2% more than was consumed in 1995–96.

**15.41 MILK CATTLE**

	Bulls used or intended for service	Cows and heifers used or intended for production of milk or cream for sale		Total(a)
		Cows (in milk and dry)	Heifers	
31 March	'000	'000	'000	'000
1993	31	1 697	776	<b>2 504</b>
1994	36	1 786	856	<b>2 678</b>
1995	(b)	1 821	(b)	<b>2 740</b>
1996	(b)	1 884	(b)	<b>2 808</b>
1997	(b)	1 977	(b)	<b>2 958</b>
1998p	(b)	2 002	(b)	<b>3 004</b>

(a) Excludes house cows and heifers. (b) Not collected separately. Included in total.

Source: AgStats (7117.0); Principal Agricultural Commodities, Australia, Preliminary 1997–98 (7111.0).

**15.42 WHOLE MILK, Production, Utilisation and Gross Value**

Year	Market milk sales by factories mill. litres	Milk used in the manufacture of dairy products mill. litres	Whole milk intake by factories	
			Total intake mill. litres	Gross value \$m
1992–93	1 810	5 519	7 329	2 314
1993–94	1 845	6 232	8 077	2 448
1994–95	1 893	6 313	8 206	2 419
1995–96	1 905	6 810	8 715	2 848
1996–97	1 920	7 116	9 036	2 809
1997–98	1 921	7 519	9 440	2 815

Source: Australian Dairy Corporation; Value of Principal Agricultural Commodities Produced, Australia, Preliminary, 1997–98 (7501.0).

**Sheep**

New South Wales has been the State with the most sheep, except for a short period in the early 1860s, when the flocks in Victoria were larger. Western Australia is presently the second largest sheep raising State, with Victoria third (table 15.43).

Sheep numbers reached a peak of 180 million in Australia in 1970. In general, numbers have fallen since this time. Poor market prospects for wool since 1990 have had a marked impact on the flock size and numbers have declined further (table 15.44). Map 15.45 shows the distribution of sheep and lambs in Australia at 31 March 1997.

**15.43 SHEEP AND LAMBS**

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
31 March	mill.	mill.	mill.	mill.	mill.	mill.	mill.
1993	48.1	23.6	13.4	15.7	33.0	4.3	<b>138.1</b>
1994	46.5	23.4	11.5	14.7	32.0	4.3	<b>132.6</b>
1995	40.5	21.4	11.6	13.2	30.2	3.9	<b>120.9</b>
1996	41.1	22.0	10.7	13.6	29.8	3.9	<b>121.1</b>
1997	42.4	22.3	10.5	13.1	27.8	4.0	<b>120.2</b>
1998p	41.4	21.9	11.2	13.4	27.7	3.9	<b>119.6</b>

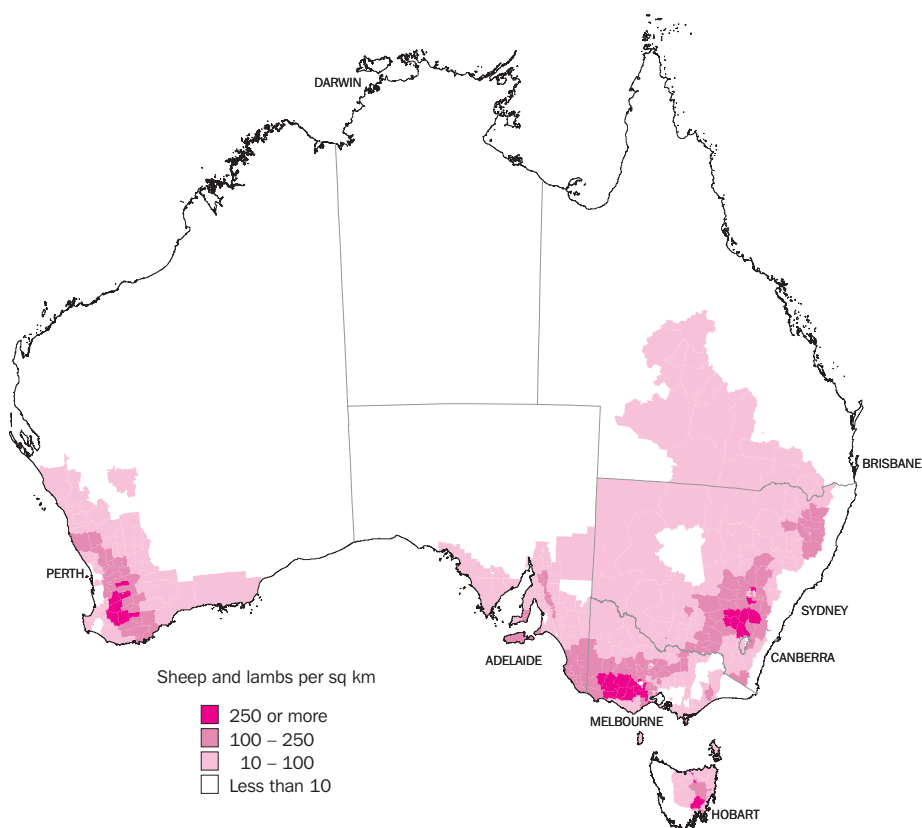
Source: AgStats (7117.0); Principal Agricultural Commodities, Australia, Preliminary, 1997–98 (7111.0).

**15.44 SHEEP AND LAMBS—As at 31 March**

	1993	1994	1995	1996	1997	1998p
	mill.	mill.	mill.	mill.	mill.	mill.
Sheep (1 year and over)						
Rams	1.4	1.4	(a)	(a)	(a)	(a)
Breeding ewes	61.4	60.8	(a)	57.2	57.4	56.6
Other ewes	6.6	5.9	(a)	(a)	(a)	(a)
Wethers	40.3	34.8	(a)	(a)	(a)	(a)
All sheep	109.7	102.8	94.0	91.7	89.8	89.0
Lambs and hoggets (under 1 year)	28.4	29.7	26.8	29.4	30.5	30.5
<b>Total sheep and lambs</b>	<b>138.1</b>	<b>132.6</b>	<b>120.9</b>	<b>121.1</b>	<b>120.2</b>	<b>119.6</b>

(a) Not separately collected.

Source: AgStats (7117.0); Principal Agricultural Commodities, Australia, Preliminary, 1997–98 (7111.0).

**15.45 SHEEP AND LAMBS, Total Number—31 March 1997**

Source: Agstats (7117.0).

## Pigs

As table 15.46 shows, New South Wales is the largest State for pig numbers, followed by Queensland.

**15.46 PIGS**

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(a)
31 March	'000	'000	'000	'000	'000	'000	'000
1993	818	425	617	435	305	44	<b>2 646</b>
1994	834	460	682	440	312	46	<b>2 775</b>
1995	791	439	644	423	316	38	<b>2 653</b>
1996	710	458	603	412	314	26	<b>2 526</b>
1997	729	485	600	417	297	24	<b>2 555</b>
1998p	810	524	612	419	289	23	<b>2 680</b>

(a) Includes the Northern Territory and the Australian Capital Territory.

Source: AgStats (7117.0); Principal Agricultural Commodities, Australia, Preliminary 1997–98 (7111.0).



**15.47 POULTRY**

	Hens and pullets for egg production	Meat strain chickens (broilers)(b)	Chickens(a)	Other poultry(c)			Total all poultry
			Total chickens	Ducks	Turkeys	Other poultry	
31 March	'000	'000	'000	'000	'000	'000	'000
1991	12 257	39 429	54 330	364	1 426	442	56 562
1992	10 735	44 318	59 320	413	1 317	(c)500	61 550
1993	12 565	51 157	63 722	404	1 093	(c)330	69 951
1994	13 163	55 513	68 676	447	839	374	70 336
1995(d)	11 148	54 445	65 593	(e)	(e)	2 088	67 682
1996	13 413	62 331	75 744	411	1 222	1 040	78 417
1997	14 059	67 373	81 432	390	1 211	909	83 942

(a) Includes breeding stock. (b) Excludes meat strain chickens in Tasmania. (c) Excludes turkeys in South Australia. (d) Excludes other poultry in South Australia. (e) Not collected.

Source: *Livestock Products, Australia* (7215.0); *AgStats* (7117.0).

**Poultry**

Meat strain chickens are the largest category of poultry in Australia, followed by hens and pullets for egg production (table 15.47).

**Meat production and slaughterings**

Tables 15.48 and 15.49 show details of slaughterings and meat production from abattoirs, and commercial poultry and other slaughtering establishments, and include estimates of animals slaughtered on farms and by country butchers. The data relate only to slaughterings for human consumption and do not include animals condemned or those killed for boiling down.

Production of sheep meats in Australia is closely associated with the wool industry. Sheep grazing often occurs on mixed farms in conjunction with beef and/or grain enterprises, and in some areas producers specialise in lamb production. The supply of sheep meat depends greatly on seasonal conditions, decisions to build up or reduce flock numbers, expectations of wool prices, live sheep exports and the pattern of domestic consumption of meat.

Significant changes have taken place in the pig producing industry in recent years. Capital investment and corporate takeovers have seen the emergence of a few large companies producing 30% of all pigs sold in Australia. These moves, on top of the trend to more intensive and efficient production techniques, have seen pig meat production rise steadily since 1982 to reach a peak in 1994–95 of 351,330 tonnes.

Production of pig meat increased by 5% in 1997–98 following two successive years of declining production.

Table 15.50 shows a time series of the gross value of livestock slaughterings. The 1997–98 estimate of value of slaughterings and other disposals was about the same as for 1996–97; this followed a sharp fall in that year over 1994–95.

In 1997–98, Japan continued to be the best customer for Australian beef with 324,000 tonnes purchased, 13% more than the previous year's shipment. Liberalisation of the Japanese market in 1991 involved the removal of import quotas in exchange for a percentage of customs value. The United States also increased its take, buying 244,000 tonnes, 14% more than the previous year. Shipments to the United Kingdom increased 24% to 10,000 tonnes, but exports of Australian beef to Canada fell by 7% to 32,000 tonnes.

Table 15.51 shows a time series of the volume of exports of fresh, chilled or frozen meat, which is dominated by bone-out beef. In 1996–97, exports of bone-in mutton increased by 14%, but this was offset by a 21% fall in exports of bone-out mutton. Exports of bone-in lamb rose by 17% in 1996–97, while 18% more pork meat was exported.

Table 15.52 shows a time series of the number, gross weight, gross value and unit value of live sheep and cattle exports. While the number of live sheep exports fell in 1997–98, the gross weight and gross value rose marginally. The number of live cattle exported in 1997–98 decreased 19% while gross weight and gross value fell by similar proportions.

**15.48 PRODUCTION OF MEAT(a)**

Year	Carcass weight						Dressed weight(b)(c)	
	Beef	Veal	Mutton	Lamb	Pig meat	Total meat	Total chickens	Total poultry(d)
	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t
1992-93	1 787	39	370	273	328	2 798	441	468
1993-94	1 786	39	381	267	344	2 817	469	500
1994-95	1 766	38	354	268	351	2 776	467	499
1995-96	1 711	34	310	265	334	2 653	481	516
1996-97	1 777	38	298	275	326	2 715	496	532
1997-98p	1 913	44	335	281	343	2 916	550	—

(a) Excludes offal. (b) Excludes Tasmania, the Northern Territory and the Australian Capital Territory. (c) Dressed weight of whole birds, pieces and giblets. (d) Includes other fowls, turkeys, ducks and drakes.

Source: *Livestock Products, Australia (7215.0)*.

**15.49 LIVESTOCK AND POULTRY SLAUGHTERED FOR HUMAN CONSUMPTION**

Year	Cattle	Calves	Sheep	Lambs	Pigs	Chickens(a)(b)	Other fowls(c) and turkeys(b)	Ducks and drakes(b)
	mill. head	mill. head	mill. head	mill. head	mill. head	mill. head	mill. head	mill. head
1992-93	7.4	1.0	17.5	15.4	5.0	304.1	8.4	2.3
1993-94	7.3	1.0	17.8	15.0	5.2	329.5	8.0	2.5
1994-95	7.2	1.0	17.5	15.3	5.1	330.5	8.7	2.3
1995-96	6.9	1.0	14.6	14.2	4.8	336.4	9.6	2.6
1996-97	7.3	1.1	14.5	14.8	4.7	345.6	10.0	3.1
1997-98p	8.1	1.3	16.4	14.9	4.9	368.3	—	—

(a) Comprises broilers, fryers and roasters. (b) Excludes Tasmania, the Northern Territory and the Australian Capital Territory.

(c) Comprises hens, roosters, etc.

Source: *Livestock Products, Australia (7215.0)*.

**15.50 GROSS VALUE OF LIVESTOCK SLAUGHTERINGS AND OTHER DISPOSALS(a)**

Year	Cattle and calves	Sheep and lambs	Pigs	Poultry	Total(b)
	\$m	\$m	\$m	\$m	\$m
1990-91	3 869.4	364.2	691.0	788.3	<b>5 721.0</b>
1991-92	3 801.9	460.6	658.6	778.0	<b>5 738.1</b>
1992-93	3 839.2	663.0	649.5	833.5	<b>6 023.5</b>
1993-94	4 433.5	793.6	660.5	929.3	<b>6 852.9</b>
1994-95	4 213.5	836.8	630.6	902.0	<b>6 618.8</b>
1995-96	3 575.9	1 035.7	597.8	948.1	<b>6 192.7</b>
1996-97	3 390.1	1 038.9	671.1	1 053.3	<b>6 190.1</b>

(a) Includes adjustment for net exports of live animals. (b) Includes goats and buffalo.

Source: *Value of Agricultural Commodities Produced, Australia (7503.0)*.

**15.51 EXPORTS OF FRESH, CHILLED OR FROZEN MEAT(a)**

Year	Beef(b)(c)		Veal(b)		Mutton(b)		Lamb(b)		Pork
	Bone-in	Bone-out	Bone-in	Bone-out	Bone-in	Bone-out	Bone-in	Bone-out	Meat
	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t
1991-92	100.0	691.5	1.5	5.7	103.7	75.0	39.4	4.6	5.0
1992-93	81.0	739.9	2.1	5.4	80.2	77.4	46.7	5.5	7.0
1993-94	62.7	742.4	1.3	5.8	97.9	71.0	52.7	5.2	5.9
1994-95	59.8	717.4	2.0	6.9	103.4	65.4	48.6	4.6	5.5
1995-96	50.7	702.6	1.7	5.3	81.0	64.3	46.3	7.8	5.7
1996-97	48.6	692.1	1.2	3.8	92.3	50.7	54.1	8.4	6.7

(a) Excludes offal. (b) Factors can be applied to beef, veal, mutton and lamb bone-out figures to derive bone-in carcass weight which, when added to bone-in figures, shows total exports in carcass weight. The factor for beef and veal is 1.5 and that for mutton and lamb is 2.0 (Source: Australian Meat and Livestock Corporation). (c) Includes buffalo meat.

Source: *Unpublished data, Merchandise Exports*.

**15.52 LIVE SHEEP AND CATTLE EXPORTS(a)**

Year	Live sheep exports				Live cattle exports			
	No.	Gross weight	Gross value	Unit value(b)	No.	Gross weight	Gross value	Unit value(b)
	'000	'000 t	\$'000	\$	'000	'000 t	\$'000	\$
1991–92	4 395.6	258.0	87 717	20.00	107.4	33.2	54 930	511.40
1992–93	5 097.1	270.5	121 933	23.92	148.6	50.4	69 847	470.20
1993–94	5 429.8	287.4	148 907	27.42	234.7	79.9	115 020	489.97
1994–95	5 697.0	290.2	184 291	32.35	385.7	136.5	201 948	523.52
1995–96	5 879.9	296.9	226 913	38.59	615.9	219.0	343 699	558.07
1996–97	5 237.2	269.8	189 944	36.27	863.8	313.9	427 721	495.19
1997–98p	5 005.6	275.6	193 759	38.71	703.6	257.6	338 475	481.10

(a) Excludes live sheep and cattle for breeding. (b) Obtained by dividing the gross value by the number of sheep, or cattle.

Source: *Unpublished data, Merchandise Exports.*

**Wool****Wool production**

Shorn wool ('greasy wool') contains an appreciable amount of grease, dirt, vegetable matter and other extraneous material. The exact quantities of these impurities in the fleece vary with climatic and pastoral conditions, seasonal fluctuations and the breed and condition of the sheep. It is, however, the clean wool fibre that is ultimately consumed by the textile industry, and the term 'clean yield' is used to express the net wool fibre content present in greasy wool. Following a gradual upward trend, clean yields have stabilised in the 1990s at around 65%.

Gross value of wool produced in 1996–97 (\$2.6b) increased marginally from 1995–96 (table 15.53), but is still less than half the value recorded in 1988–89 (\$5.9b), which was the peak year in the wool boom of the 1980s.

**Wool receivals**

The total amounts of taxable wool received by brokers and purchased by dealers in recent years are shown in table 15.54. They exclude wool received by brokers on which tax had already been paid by other dealers (private buyers) or brokers.

**15.54 TAXABLE WOOL RECEIVALS**

Year	Receivals			Dealers as % of total receivals
	Brokers	Dealers	Brokers and dealers	
	'000 t	'000 t	'000 t	
1992–93	703.2	140.8	844.1	16.8
1993–94	635.2	149.0	784.2	19.0
1994–95	566.6	112.8	679.4	16.6
1995–96	548.1	93.1	641.3	14.5
1996–97	565.5	119.8	685.3	17.5

Source: *Livestock Products, Australia (7215.0).*

**15.53 SHEARING, WOOL PRODUCTION AND VALUE**

Year	Sheep and lambs shorn	Average fleece weight	Wool production			
			Total wool		Quantity	Gross value(b)
			Shorn wool	Other wool(a)		
	mill.	kg	'000 t	'000 t	'000 t	\$m
1992–93	179.0	4.55	815.1	54.3	869.4	2 569.0
1993–94	148.7	4.49	775.8	52.6	828.3	2 449.1
1994–95	155.3	4.37	677.9	48.5	726.4	3 319.3
1995–96	146.7	4.46	659.8	43.6	703.4	2 559.7
1996–97	156.4	4.37	681.5	46.7	728.2	2 621.2

(a) Comprises dead and fellmongered wool, and wool exported on skins. (b) Gross value is based for shorn wool upon the average price realised for greasy wool sold at auction and, for skin wools, on prices recorded by fellmongers and skin exporters.

Source: *Value of Agricultural Commodities Produced, Australia (7503.0); Livestock Products, Australia (7215.0).*

## Wool marketing arrangements

A 'free marketing' system operates in the wool industry with no direct government involvement and with the majority of wool being sold 'open cry' at auction.

The Reserve Price Scheme, which was operated from 1974, was suspended in February 1991. It had become unviable due to the massive accumulation of wool in the stockpile and the substantial debt which had been incurred. The wool stockpile peaked at 4,727,389 bales in February 1991.

In 1994, the Australian Wool Research and Promotion Organisation (AWRAP) integrated its operations with the International Wool Secretariat (IWS) to form a strong customer-oriented international promotion and research organisation focused on building sustainable demand for wool and wool products. On 1 July 1997, IWS became an incorporated body and was later relaunched as IWS International Pty Ltd to reflect the increasingly commercial focus of the organisation. From 1 July 1998, it became The Woolmark Company. While the Woolmark Company and AWRAP remain separate legal entities, all operational activities are conducted under the name The Woolmark Company. AWRAP conducts certain statutory activities independent of The Woolmark Company.

Wool International is a Statutory Corporation of the Commonwealth Government, and is responsible for selling and managing the disposal of the stockpile. Most wool is sold forward from the stockpile by private treaty. Since 1 July 1997, Wool International has been required to deliver a minimum of 90,000 bales up to a maximum of 350,000 bales from the stockpile per quarter. Further, it is required to deliver the last bale of stockpile wool by 31 December 2000. It is also required to sell the stockpile so as to foster the profitability and efficiency of the wool industry and maximise the value of stockpile wool. Revenue from sales from the stockpile is used to

repay the commercially funded, government guaranteed debt. Surplus funds will be distributed to those who paid wool-tax over the period 1993-94 to 1995-96. At 30 June 1998, the stockpile had reduced to 1,183,949 bales.

From 1 February 1994, the Australian Wool Exchange (AWEX) took over responsibility for the wool marketing system. AWEX is a non-profit public company limited by guarantee. Its major roles include building and running a self-regulating wool selling structure and a market reporting and statistical service on behalf of the wool trade. To achieve this goal, AWEX is exploring the advantages and disadvantages of selling wool by different methods. This is illustrated by the ongoing trials involving sale of wool by description without display samples.

## Emerging agricultural industries

The list of agricultural commodities that are produced in Australia has continued to expand. Some, such as goat (either for fibre, meat or milk) and deer (meat and velvet) production, are now well established. More recent developments undertaken by the livestock farming industry include:

- sheep milk farming;
- emu farming;
- ostrich farming;
- rabbit farming;
- worm farming;
- crocodile farming; and
- alpaca farming.

In horticulture, established crops now include tea and coffee. Other crops more recently introduced include a large variety of fruits and vegetables (mainly from Asia), herbs and the oil pyrethrum.

## Apparent consumption of foodstuffs

Estimates of the consumption of foodstuffs in Australia are compiled by deducting exports from the sum of production and imports and allowing for recorded movement in stocks of the various commodities. The term 'consumption' is used in a specialised sense. The estimates derived are broadly the quantities available for consumption at a particular level of distribution, that is, ex-market, ex-store or ex-factory depending on the method of marketing and/or

processing. Because consumption of foodstuffs is measured, in general, at producer level, no allowance is made for consumer wastage. Ignoring this wastage will result in overstating consumption to some extent.

The estimates of consumption per capita have been obtained by using the mean resident population for the period.

Table 15.55 shows the changes in trends in the consumption of various foodstuffs since 1938–39.

**15.55 APPARENT PER CAPITA CONSUMPTION OF FOODSTUFFS**

Commodity	Units	Average three years ended							
		1938–39	1948–49	1958–59	1968–69	1978–79	1988–89	1995–96	1996–97
Meat (carcass equivalent weight)									
Beef	kg	n.a.	n.a.	n.a.	n.a.	n.a.	38.3	34.1	37.7
Veal	kg	n.a.	n.a.	n.a.	n.a.	n.a.	1.7	1.7	1.8
Beef and veal	kg	63.6	49.5	56.2	40.0	64.8	40.0	35.5	39.4
Lamb	kg	6.8	11.4	13.3	20.5	14.4	14.9	11.1	11.1
Mutton	kg	27.2	20.5	23.1	18.8	3.6	7.3	5.5	6.5
Pigmeat	kg	3.9	3.2	4.6	6.7	13.3	17.5	18.1	17.5
Total meat	kg	101.5	84.6	97.2	85.9	96.1	79.8	70.2	74.5
Offal and meat, n.e.i.	kg	3.8	4.0	5.2	5.1	5.9	3.1	1.5	1.4
<i>Total meat and meat products (carcass equivalent weight)</i>	<i>kg</i>	<i>118.5</i>	<i>103.0</i>	<i>112.4</i>	<i>98.8</i>	<i>102.0</i>	<i>82.8</i>	<i>71.7</i>	<i>75.9</i>
Canned meat (canned weight)	kg	1.0	1.2	1.9	2.2	1.6	n.a.	n.a.	n.a.
Bacon and ham (cured carcass weight)	kg	4.6	5.3	3.2	3.6	6.0	6.9	8.2	8.4
Poultry (dressed weight)	kg	n.a.	n.a.	n.a.	8.3	17.1	24.1	28.3	28.4
Milk and milk products									
Market milk (fluid whole litres)	L	106.4	138.7	128.7	128.2	100.5	101.7	104.2	104.2
Cheese (natural equivalent weight)	kg	2.0	2.5	2.6	3.5	5.3	8.8	10.5	10.7
Oils and fats									
Butter	kg	14.9	11.2	12.3	9.8	5.1	3.2	2.9	2.7
Margarine	kg	2.2	2.8	n.a.	4.9	8.5	9.0	7.9	6.6
Table margarine	kg	0.4	0.4	n.a.	1.5	5.4	6.8	5.4	4.7
Other margarine	kg	1.8	2.4	2.2	3.4	3.1	2.2	2.5	1.9
Beverages									
Tea	kg	3.1	2.9	2.7	2.3	1.7	1.2	0.9	0.8
Coffee	kg	0.3	0.5	0.6	1.2	1.6	2.0	2.2	2.0
Aerated and carbonated waters	L	n.a.	n.a.	n.a.	47.3	67.4	87.4	115.2	114.4
Beer	L	53.2	76.8	99.7	113.5	133.2	113.1	95.3	94.7
Wine	L	2.7	5.9	5.0	8.2	14.7	20.2	18.3	19.0
Spirits (litres alcohol)	L	0.5	0.8	0.7	0.9	1.2	1.2	1.4	1.3

Source: *Apparent Consumption of Foodstuffs, Australia* (4306.0).

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## Forestry

### Introduction

Forests are an important sustainable natural resource providing a wide range of indispensable products and benefits to the community.

Forest vegetation cover protects the soil from water and wind erosion, reduces flooding and siltation of water bodies and maintains water quality. Forests provide habitats for a wide variety of native animals and plants. They also act as a sink to absorb greenhouse gases.

The forests and wood products industries based on native and plantation forests contribute substantially to Australia's economy, especially to employment in regional areas. Forests are also valuable ecosystems providing a gene pool of

great diversity for scientific investigation; a source of honey, oils, gums, resins and medicines; and a resource base for education, tourism, recreation and other purposes. Forests cannot necessarily provide for all uses at the same time, but careful management will ensure that forests provide multiple benefits in the long-term for the Australian community.

Farm forestry is becoming increasingly important as a potential commercial source of wood. A broad range of programs has been implemented by governments and private organisations to promote tree planting on Australian farms.

### Forest estate

#### Native forest

Native forest is defined by the National Forest Inventory (NFI) as "an area, incorporating all living and non-living components, dominated by trees having usually a single stem and a mature

#### 16.1 NATIVE FOREST AREAS, By Dominant Canopy and Tenure—30 June 1997

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	'000 ha.	'000 ha.	'000 ha.	'000 ha.	'000 ha.	'000 ha.	'000 ha.	'000 ha.	'000 ha.
CLASSIFIED BY DOMINANT CANOPY SPECIES									
Eucalypt									
Tall	2 097	2 825	1 126	2	171	250	—	72	6 543
Medium	12 842	2 986	28 511	497	20 815	1 901	23 849	48	91 450
Low	1 163	76	2 340	316	3 431	86	7 288	—	14 700
Mallee	1 827	958	—	4 005	4 973	—	—	—	11 764
Unknown	—	—	6	—	—	—	—	—	6
<i>Total eucalypt</i>	17 929	6 845	31 984	4 820	29 390	2 237	31 138	120	124 463
Acacia	944	17	4 603	307	3 986	3	2 439	—	12 298
Melaleuca	202	18	2 643	2	155	—	1 072	—	4 093
Rainforest	209	3	2 567	—	7	545	252	—	3 583
Casuarina	802	—	62	147	40	(a)	—	—	1 052
Mangrove	7	5	398	20	173	—	442	—	1 045
Callitris	382	37	309	139	—	—	—	—	867
Other	312	360	6 490	63	1 048	118	43	—	8 435
<b>Total</b>	<b>20 787</b>	<b>7 285</b>	<b>49 056</b>	<b>5 499</b>	<b>34 800</b>	<b>2 904</b>	<b>35 385</b>	<b>120</b>	<b>155 835</b>
CLASSIFIED BY TENURE									
Multiple Use Forest(a)	3 095	3 346	3 983	27	1 612	1 285	—	5	13 351
Nature Conservation Reserve(b)	3 060	2 710	2 870	1 252	4 364	523	2 709	93	17 580
Other Crown Land(c)	605	165	1 051	12	13 206	296	258	2	15 597
Leasehold(d)	5 966	—	23 996	1 866	14 025	—	20 236	13	66 103
<i>Total public</i>	12 726	6 221	31 900	3 157	33 207	2 104	23 203	113	112 631
Private	8 046	1 038	17 111	2 327	1 502	801	11 187	7	42 018
Unresolved tenure	15	26	44	15	90	—	995	—	1 186
<b>Total</b>	<b>20 787</b>	<b>7 285</b>	<b>49 056</b>	<b>5 499</b>	<b>34 800</b>	<b>2 904</b>	<b>35 385</b>	<b>120</b>	<b>155 835</b>

(a) Publicly owned land managed for multiple use including wood production. (b) Public land on which wood production is excluded (National Parks, etc.). (c) Reserved areas of educational, scientific and other public institutional land, including easements, defence land, and other minor tenure classifications. (d) Crown land where the right to harvest or clear land must be approved by State/Territory Governments. Often known as pastoral leases.

Source: National Forest Inventory, Canberra.

or potentially mature stand height exceeding two metres and with an existing or potential crown cover of overstorey strata about equal to or greater than 20%." This definition includes Australia's diverse native forests, regardless of age. It is also sufficiently broad to encompass areas of trees that are sometimes described as woodlands.

Based on this definition, the total area of native forest at 30 June 1997 was estimated at 155.8 million hectares (table 16.1), which is about 20% of Australia's land area.

The above definition is based on the 1992 National Forest Policy Statement (NFPS), modified to reduce uncertainty relating to crown cover and height. The NFPS definition refers to 'usually' single stemmed trees, which recognises that mallees, Australia's multi-stemmed eucalypt trees, must be included. To make this possible, the lower tree height limit has been set at two metres, a reduction from five metres. The full definition, which requires the vegetation to be of tree formation, excludes shrublands even if they are higher than two metres. This reduction in the minimum height makes no significant difference to the total area of forest, adding only about 4–5% to the total.

There is currently no national standard used for mapping tree height. Height information has either been collected or reclassified by the NFI into three categories:

- low: 2 to 10 metres
- medium: greater than 10 metres, up to 30 metres

- tall: greater than 30 metres.

Of the 155.8 million hectares of native forest at 30 June 1997, 112.6 million hectares (72%) were publicly owned and 42 million hectares (27%) were on private land. Of the publicly-owned forests, 17.6 million hectares (16%) were in Nature Conservation Reserves, 13.4 million hectares (12%) were managed by State forest authorities for various uses, including wood production, 15.6 million hectares (14%) were on other Crown land, and 66.1 million hectares (59%) were on leasehold tenure.

## Plantations

The first report of the National Plantation Inventory (NPI) of Australia (1997) brings together comprehensive information on Australia's standing plantation forest resources at regional and national levels. The NPI project was established to allow up-to-date quantitative reporting of Australia's plantation resource (both hardwood and softwood) based on growers' information. This includes location, area, species and age of plantations.

A small proportion of Australia's land is covered by plantations. Australia has around 1.04 million hectares (table 16.2) of standing plantations, planted to the end of 1994. Of these, 883,840 hectares are softwood (mostly *Pinus radiata*) and 158,640 hectares are hardwood. While planting information after 1994 was provided to the NPI, this information was not nationally comprehensive, and so it was not brought into the national/State summaries of plantation areas.

### 16.2 PLANTATION AREAS, Classified by Species—31 March 1995

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Species group	ha.	ha.	ha.	ha.	ha.	ha.	ha.	ha.	ha.
<b>Softwood</b>									
<i>Pinus radiata</i>	222 997	195 195	2 269	99 521	61 125	47 236	—	14 596	642 940
<i>Pinus elliotii</i>	4 701	—	68 183	—	—	—	—	—	72 880
<i>Pinus pinaster</i>	—	761	—	442	27 678	—	—	—	28 880
<i>Pinus caribaea</i>	—	—	51 739	—	—	—	2 419	—	54 160
<i>Araucaria</i> species	1 755	—	43 547	—	—	—	—	—	45 300
Other	8 163	73	2 957	1 944	—	24 736	1 806	—	39 680
<b>Total</b>	<b>237 616</b>	<b>196 029</b>	<b>168 694</b>	<b>101 907</b>	<b>88 803</b>	<b>71 972</b>	<b>4 225</b>	<b>14 596</b>	<b>883 840</b>
<b>Hardwood</b>									
<i>Eucalyptus</i> species	32 631	19 307	1 295	1 038	42 042	62 018	—	38	158 370
<i>Populus</i> species	—	40	—	—	—	—	—	—	40
Other	5	—	—	—	—	—	—	225	230
<b>Total</b>	<b>32 636</b>	<b>19 347</b>	<b>1 295</b>	<b>1 038</b>	<b>42 042</b>	<b>62 018</b>	<b>—</b>	<b>263</b>	<b>158 640</b>
<b>Total</b>	<b>270 250</b>	<b>215 380</b>	<b>169 990</b>	<b>102 950</b>	<b>130 850</b>	<b>133 990</b>	<b>4 230</b>	<b>14 860</b>	<b>1 042 500</b>

Source: National Forest Inventory, Canberra.

Under the National Forest Policy Statement (NFPS) agreed to by the Commonwealth Government and the State and Territory Governments in 1992, Australia is committed to expanding its plantation estate to provide additional resources for the forestry sector. The Commonwealth Government has supported the expansion of Australia's plantation resource base for many years. For instance, the National Afforestation Program (NAP) was established in 1987–88 as a three year grants program to stimulate an expansion in the commercial hardwood timber resource and to assist in land rehabilitation through broadacre commercial plantations (including farm forestry).

The Government has continued to support and stimulate commercial plantation development on cleared agricultural land through the Farm Forestry Program (FFP) and the Community Rainforest Reafforestation Program (CRRP). The Government announced the implementation of a range of measures to encourage plantation and farm forestry development in the Wood and Paper Industry Strategy, issued in December 1995.

In July 1996, the Commonwealth Minister for Primary Industries and Energy, also Chairman (Forestry) of the Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA), announced that the third meeting of the Council agreed to a national goal of trebling Australia's forest plantations estate by the year 2020. This will enhance growth in Australia's forest industry and the contribution made by plantations to the Australian economy, rural communities and regional development.

### Wood and paper products

Australia's wood and paper products industries are important components of Australia's primary and secondary industries. They are particularly important in providing economic development and employment in many regions of rural Australia. The industries include hardwood and softwood sawmilling, plywood and panels manufacturing, woodchip production and export, and the pulp and paper industries. Just over 61,000 people are directly employed in growing and harvesting of wood and the manufacture and processing of wood and paper products (table 16.3). The wood and paper products industries contribute about 2% to Gross Domestic Product. In 1995–96, the value of turnover in the wood and paper products industries was \$11.1b, of which wood processing establishments (log sawmilling, timber dressing and other wood product manufacturing) contributed turnover of \$5.7b.

Preliminary estimates for 1996–97 show that total roundwood removed from forests increased by 4% to nearly 20.2 million cubic metres. While the removal of broadleaved wood (primarily from native forests) decreased by 5% in 1996–97 to 9.7 million cubic metres, the removal of coniferous wood (mainly from plantations) rose by 14%.

In 1996–97, the value of exports of forest products totalled \$1,105m, of which 47% were woodchips and 32% paper and paperboard products. In the same year, the value of imports of forest products was \$2,547m, of which 54% were paper and paperboard products and 15% sawnwood. This indicates a trade deficit in forest products of \$1,442m in 1996–97. Australia produces 83% of its sawn timber needs, of which native forests provide about 39%, with the balance coming from softwood plantations. Imported sawn timber is mostly Douglas Fir from North America, and Radiata Pine from New Zealand.

The hardwood and softwood sawmilling industries comprise mills of various sizes which process wood into sawn timber and other products such as veneers, mouldings and floorings. The hardwood mills are generally small scale and scattered. The softwood mills are generally of a larger scale and more highly integrated with other wood processing facilities. Australia's production of sawn timber decreased by 2% in 1996–97 to 3,383,000 cubic metres (table 16.4), of which 61% was softwood.

Other value added timber products include plywood, wood-based panels and reconstituted wood products. Australian wood-based panels include particleboard, medium density fibreboard and hardboard made from softwood or hardwood pulp logs, sawmill residues or thinnings.

Pulp and paper mills use roundwood thinnings, low quality logs, harvesting residues and sawmill waste, and recycled paper and paperboard, to produce a broad range of pulp and paper products. Around a third of domestically consumed paper is imported. The majority of paper products produced domestically are packaging and industrial papers, newsprint, printing and writing papers, and tissue paper. Each requires different inputs and technologies. Recycled paper now contributes about half the fibre used in the production of paper and paperboard.

Woodchips are mainly used in the production of paper and paper products, and the woodchip export industry uses sawmill residues and timber which is unsuitable for sawmilling and not required by the Australian pulp, paper and reconstituted board industries. Before the advent of the woodchip export industry, much of this material was left in the forest after logging. Considerable quantities of sawmill waste material, which would

otherwise be burnt, are also chipped for local pulpwood-using industries and for export. Until recently, at least 95% of woodchips exported from Australia have been eucalypt, but increasing quantities of softwood woodchips are now becoming available from pine plantations. In 1996–97, 23% of the total value of woodchips exported was from softwood woodchips.

### 16.3 WOOD AND PAPER PRODUCT MANUFACTURING INDUSTRIES, Summary of Operations—1995–96

Species group	Employment at 30 June(a)	Wages and salaries(b)	Turnover
	'000	\$m	\$m
Log sawmilling and timber dressing			
Log sawmilling	7.6	191.0	798.5
Wood chipping	0.9	32.7	454.8
Timber resawing and dressing	6.2	185.9	994.7
Total	14.6	409.5	2 248.0
Other wood product manufacturing			
Plywood and veneer manufacturing	1.6	45.1	239.4
Fabricated wood manufacturing	4.2	154.6	881.8
Wooden structural component manufacturing	15.9	370.5	1 764.2
Wood product manufacturing n.e.c.	6.7	135.7	582.9
Total	28.5	705.9	3 468.3
Paper and paper product manufacturing			
Pulp, paper and paperboard manufacturing	5.8	268.7	2 462.2
Solid paperboard container manufacturing	2.4	85.7	481.3
Corrugated paperboard container manufacturing	5.5	239.7	1 498.3
Paper bag and sack manufacturing	0.9	34.3	209.5
Paper product manufacturing n.e.c.	3.3	125.9	773.4
Total	17.9	754.3	5 424.8
<b>Total wood and paper product manufacturing</b>	<b>61.0</b>	<b>1 869.7</b>	<b>11 141.1</b>

(a) Includes working proprietors. (b) Excludes the drawings of working proprietors.

Source: *Manufacturing Industry, Australia* (8221.0).

### 16.4 PRODUCTION OF WOOD AND SELECTED WOOD PRODUCTS

Commodity	Quantity	1993–94	1994–95	1995–96	1996–97
Sawn Australian grown timber					
Coniferous	'000 m <sup>3</sup>	1 898	2 121	2 053	2 062
Broadleaved	'000 m <sup>3</sup>	1 533	1 570	1 391	1 321
Total	'000 m <sup>3</sup>	3 431	3 691	3 445	3 383
Hardwood woodchips(a)	'000 t	4 612	5 437	4 827	4 779
Railway sleepers	'000 m <sup>3</sup>	82	84	86	72
Plywood	'000 m <sup>3</sup>	138	145	131	151
Unlaminated particle board(a)	'000 m <sup>3</sup>	828	864	826	790
Medium density fibreboard	'000 m <sup>3</sup>	421	436	377	434
Wood pulp(a)	'000 t	996	1 009	986	949
Paper and paperboard					
Newsprint(a)	'000 t	426	444	445	421
Printing and writing	'000 t	386	365	351	364
Household and sanitary	'000 t	170	173	180	181
Packaging and industrial	'000 t	1 255	1 312	1 344	1 452

(a) Excludes production of small single establishment management units with fewer than four persons employed, and establishments engaged in non-manufacturing activities but which may carry on, in a minor way, some manufacturing.

Source: *Unpublished data, Australian Bureau of Statistics and Australian Bureau of Agricultural and Resource Economics.*

## Government administration

Land and forests management is primarily the responsibility of State and Territory Governments. Each State has a forest authority responsible for the management and control of publicly-owned forests, in accordance with the Forestry Acts and Regulations of the State or Territory concerned.

Agriculture, Fisheries and Forestry—Australia (AFFA) and the Department of the Environment and Heritage (E&H) are the two key agencies which have responsibilities relating to forests at the national level. Close liaison is maintained between the two agencies on relevant issues. AFFA's main responsibilities are the development of a national approach to forest management; providing advice to the Commonwealth Minister responsible for forest matters; administration of export licensing responsibilities in relation to unprocessed timber; liaison with State, national and international organisations concerned with forestry; provision of a Secretariat for the Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA); and management of policy and program initiatives.

E&H has responsibilities for environmental matters relating to forests, and provides policy advice to its Minister and the Government on conservation and environmental matters pertaining to Australia's forests, including biological diversity and climate change. The Australian Heritage Commission and Environment Australia within the Environment and Heritage Portfolio have assessment, management and monitoring roles in respect of the national estate, endangered species and environmental impacts in Australia's forests.

AFFA and E&H, in close cooperation with the States, Territories and Ministerial Councils, were extensively involved in the development of the National Forest Policy Statement and the National Forest Inventory.

The MCFFA consists of Commonwealth, State, Territory and New Zealand Ministers responsible for forestry. The Council is chaired jointly by the Commonwealth Minister for Agriculture, Fisheries and Forestry and the Commonwealth Minister for Industry, Science and Resources. MCFFA, the successor of the Australian Forestry Council formed in 1964, works to provide leadership and facilitate cooperation at the national level.

Initiatives fostered by the MCFFA are aimed at promoting the enhanced management of the nation's forest resources in the general interest of the community. Most recently, it has been involved in the development and implementation of initiatives under the National Forest Policy Statement in cooperation with the Australian and New Zealand Environment and Conservation Council.

## Commonwealth Government initiatives

### National Forest Policy Statement (NFPS)

The NFPS was signed by the Commonwealth and all mainland State and Territory Governments at the Council of Australian Governments' meeting in Perth in December 1992. Tasmania became a signatory in 1995.

The Statement provides a policy framework for the future management of Australia's public and private forests and outlines a vision for the ecologically sustainable management of Australia's forests, comprising 11 broad national goals in the following areas:

- Conservation—to maintain an extensive and permanent native forest estate in Australia and to manage that estate in an ecologically sustainable manner so as to conserve all values including biological diversity, heritage and Aboriginal and other cultural values.
- Wood production and industry development—to develop internationally competitive and ecologically sustainable wood production and wood products industries.
- Integrated and coordinated decision-making and management—to reduce fragmentation and duplication in the land use decision-making process between the States and the Commonwealth.
- Private native forests—to ensure that private native forests are maintained and managed in an ecologically sustainable manner, as part of the permanent native forest estate.
- Plantations—to expand Australia's commercial plantations of softwoods and hardwoods so as to provide an additional economically viable, reliable and high-quality wood resource for industry and to meet other environmental and economic objectives, in particular the rehabilitation of cleared agricultural land and the improvement of water quality.

- Water supply and catchment management—to ensure the availability of reliable, high-quality water supplies from forested land and to protect catchment areas.
- Tourism and other economic and social opportunities—to manage Australia's forests in an ecologically sustainable manner for a range of uses, including tourism, recreation and production of non-wood products.
- Employment, labour force education and training—to expand employment opportunities and the skills base of people working in forest management and forest-based industries.
- Public awareness, education and involvement—to foster community understanding of, and support for, ecologically sustainable forest management.
- Research and development—to increase Australia's national forest research and development effort and to ensure that it is well coordinated, efficiently undertaken and effectively applied.
- International responsibilities—to promote nature conservation and sustainable use of forests outside Australia and to ensure that Australia fulfils its obligations under relevant international agreements.

### Plantation initiatives under the NFPS

In 1993, under the NFPS, the Commonwealth established two plantations initiatives: the Farm Forestry Program (FFP) and the Community Rainforest Reforestation Program (CRRP). The CRRP is a joint initiative, sponsored by the Commonwealth Government and State/Territory and local governments.

Commonwealth funding of the CRRP and FFP has continued since 1992 under the Wood and Paper Industry Strategy. From 1997–98, further funding for the FFP has been provided under the Natural Heritage Trust.

### Farm forestry

The FFP aims to promote commercial wood production on cleared agricultural land so as to provide an additional reliable, high-quality wood resource for sustainable regional industries, as well as to diversify farm incomes. The FFP also promotes tree-planting for the production of non-wood products with an emphasis on developing commercial uses of native species, while addressing problems of land degradation.

A total of \$36.5m is available from the Natural Heritage Trust for farm forestry, of which \$3.1m was available in 1997–98.

### Regional Forest Agreements (RFA)

Australia's National Forest Policy sets out broad conservation and industry goals for the management of Australia's forests agreed between the Commonwealth Government and the State and Territory Governments.

To implement this national policy, governments have opted for an approach which involves:

- providing interim protection to forest areas which may be required for a Comprehensive, Adequate and Representative (CAR) forest reserve system;
- undertaking Comprehensive Regional Assessments (CRAs) of environmental, heritage, economic and social values of forests; and
- negotiating RFAs between the Commonwealth Government and the State/Territory Governments about the long-term management and use of forests in a particular region.

Governments have agreed to a framework and process for carrying out comprehensive assessments of the economic, social, environmental and heritage values of forest regions.

In 1996, the Government allocated an additional \$48m over three years to accelerate the completion of the CRA process.

Once completed, CRAs will provide Governments with the information required to make decisions about forest use and sustainable management over the long term.

RFAs will provide a blueprint for the future management of our forests, and the basis for an internationally competitive and ecologically sustainable forest products industry.

The first RFA was signed between the Commonwealth Government and the Victorian Government for the East Gippsland region in February 1997. The RFA for Tasmania was signed in November 1997, while the RFA for Central Highlands (NSW) was signed in March 1998.

RFAs for Eden (NSW), Upper North East (NSW), North East (Victoria) and Western Australia are expected to be finalised during 1998. The Lower



Northern East (NSW) and South East Queensland RFAs are expected to be signed during the first half of 1999.

### **Wood and Paper Industry Strategy (WAPIS)**

The Commonwealth outlined new initiatives to underpin development of the wood and paper industry in the WAPIS released in December 1995. The strategy is intended to build upon the RFA process, and aims to facilitate a positive environment for investment in downstream processing based on resources from sustainably managed native forests and plantations. The WAPIS is complemented by the Forest Industry Structural Adjustment program.

The WAPIS provides support to enhance the development of a farm forestry resource, activities to underpin forestry growing and processing, and industry research and development, including criteria and indicators for sustainable forest management.

The strategy seeks to include specific measures to enhance the development of a viable, value adding forest products industry by removing impediments and disincentives to reinvestment.

In the 1996–97 Federal Budget, \$32m was allocated to the Wood and Paper Industry Strategy over the four years 1996–97 to 1999–2000.

### **Forestry Industry Structural Adjustment Package (FISAP)**

The 1996–97 Federal Budget allocated \$98.6m to the FISAP to assist businesses and workers involved in native forest industries to adjust to changes as a result of the Interim/Deferred Forest Agreements and Regional Forest Agreements. From this allocation, \$60m has been committed to industry restructuring in New South Wales, and is matched by an additional \$60m contribution from the New South Wales Government. Arrangements in other States/Territories will be determined on the basis of need following discussions with the relevant authorities. At 30 June 1997, about \$10m of Commonwealth funds had been spent on FISAP, of which over \$8m was spent in New South Wales.

### **National Forest Inventory (NFI)**

In many of the debates over forest management, the information base on forest attributes, such as

timber, fauna and flora, has been found to be incomplete. Accordingly, in late 1988 the Commonwealth Government initiated NFI. A State of the Forests Report (SOFR) being prepared by the NFI will include a description of the resource, forest use and management, and an examination of the social forces framing public opinion.

### **National Plantation Inventory (NPI)**

The need for a NPI was highlighted in the Wood and Paper Industry Strategy. The purpose of the NPI is to describe in detail Australia's plantation resource in terms of location, species, planting date, and to forecast regional and national wood flows. The comprehensive information base, used to produce the first report of the NPI in 1997, leads to more informed discussion and decision-making about the future of Australia's forest industry.

### **Tropical timber**

In June 1992, the Commonwealth Government announced its International Tropical Forest Conservation and Sustainable Land Use Policy. A key aspect of the policy is a commitment to the year 2000 target set by the International Tropical Timber Organisation (ITTO), by which date all tropical timber products entering international trade should be derived from sustainably managed forests.

Other aspects of the policy include support for the conservation of biodiversity, reforestation through agroforestry and plantations, and the provision of technical and scientific assistance to other countries, largely in the Asia-Pacific region, to promote better forest management practices. These policy measures complement initiatives arising from the Rio Earth Summit including the Conventions on Climate Change and Biodiversity, Agenda 21, and the Statement of Principles on Forests.

### **Pulp mill guidelines**

In December 1989, the Commonwealth established environmental guidelines for the development of new bleached eucalypt kraft pulp mills. To ensure the effective implementation of the Commonwealth guidelines and to streamline approval processes, the Commonwealth concluded agreements with Tasmania, Western Australia and Victoria.

To ensure that the Commonwealth guidelines remain current with international developments in pulping and bleaching technologies, the

Government also announced in December 1989 the establishment of a National Pulp Mills Research Program (NPMRP). The NPMRP is a cooperative venture involving the Commonwealth Government and State Governments, community interest groups, industry and the Commonwealth Scientific and Industrial Research Organisation (CSIRO). The Program's principal objectives are the expansion of basic knowledge in pulping of eucalypt woods and bleaching of the pulps; improving the currently available technology; and developing more relevant and superior biological monitoring systems for the receiving waters.

The Commonwealth has released a set of guidelines based on recent international research under the Pulp and Paper Research Program and recent international developments in the wood pulping industry.

### **Forest and Wood Products Research and Development Corporation**

The Forest and Wood Products Research and Development Corporation was established in 1994 as a key initiative under the National Forest Policy Statement, to assist the forest industries to improve their international competitiveness and to realise their growth potential. The Corporation has structured its work around four key research programs:

- sustainability and environmental management;
- better structural/building systems;
- process and new product development; and
- plantation and regrowth timber—from forest to market.

The Corporation is jointly funded by industry and the Commonwealth.

### **First Approximation Report of the 'Montreal Process' Working Group**

In June 1997, Australia released its *First Approximation Report* on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests (the 'Montreal Process'). This was the first time Australia had attempted to report against the seven criteria and 67 indicators of sustainable forest management agreed by the Montreal Process Working Group in 1995. Data for the report were drawn from the National Forest Inventory as well as Commonwealth, State and Territory agencies. More details of the objectives

of the Working Group and results to date are given in the *Forests* section of *Chapter 14, Environment*.

### **Framework of regional criteria and indicators**

The Commonwealth Government and the State Governments, with input from other stakeholders, have developed a framework of regional criteria and indicators for assessing sustainable forest management in the RFA process. The framework is based on the internationally agreed Montreal Process criteria and indicators. A national conference and a series of expert/technical workshops provided input into the development of the framework, which aims to provide:

- a basis for assessing progress towards the achievement of sustainable forest management on a regional (sub-national) scale;
- information in terms of a scale which can be aggregated to a national level in a transparent and credible way for reporting against the Montreal Process criteria and indicators; and
- direction to the RFA process concerning data collection and reporting with respect to sustainable forest management.

The framework is also relevant to areas outside the RFA process. The development and use of indicators will be an evolving process that will be reviewed and adjusted as appropriate to reflect new research findings, advances in technology, changes in community values, and developments in sustainable forest management practices.

### **Commonwealth Scientific and Industrial Research Organisation (CSIRO)**

CSIRO organises its research programs by industry sector. Research on production forestry and forest products takes place in the Forestry, Wood and Paper Industries Sector. The emphasis is on strategic research concerned with sustainable commercial production and processing of wood from native eucalypt forests and plantations of eucalypts and softwoods.

Much of CSIRO's work in this sector takes place at CSIRO Forestry and Forest Products, which has its headquarters and main laboratory in Canberra; a forest products laboratory at Clayton, Victoria; and other laboratories in Hobart, Tasmania; Mount Gambier, South



Australia; and Perth, Western Australia. Part of the Cooperative Research Centre for Sustainable Forest Management is co-located with the Division on the campus of the University of Tasmania. The Cooperative Research Centre for Hardwood Fibre and Paper Science operates from the CSIRO–Monash University site at Clayton. Other Divisions of CSIRO which contribute to the sector are the Divisions of Entomology, Land and Water, Plant Industry, Wildlife and Ecology and Mathematical and Information Sciences.

CSIRO Divisions of Wildlife and Ecology and Plant Industry undertake studies of rainforest ecology from the Tropical Forest Research Centre at Atherton, Queensland.

Research undertaken by CSIRO Forestry and Forest Products is closely aligned to major forest resources and industries: softwood plantations, hardwood plantations, native forests, farm forestry, solid wood processing and production, wood protection, wood composites, and pulp and paper. Important disciplines are tree physiology, nutrition, genetics, chemistry, wood science and engineering. Major projects include genetic improvement, regrowth forest management, later age stand management in softwood plantations, irrigation forestry, processing small hardwood logs, harvesting and transport, fire behaviour and management, wood quality and testing, development of wood preservatives, improved pulping technologies, and recycling.

Sustained high value production has long been a major goal of forest managers and researchers. Australia has endorsed the criteria and indicators for the sustainable management of native forests developed through the Montreal Process. The National Forest Policy Statement and the Wood and Paper Industry Strategy provide the framework for cooperative national action on this issue. The Division is actively involved in research for defining and monitoring ecologically sustainable forest management, in the role of forests in minimising the levels of greenhouse gases, in the UN Convention on Climate Change, and in conservation of biodiversity.

## Fishing

### Fisheries resources

This section covers Australia's fisheries resources and activities relating to their protection and use.

Australia's fisheries stocks are extremely diverse but, by world standards, its marine ecosystem is relatively unproductive. The Australian Fishing Zone (AFZ) covers an area 16% larger than the Australian land mass and is the third largest fishing zone in the world. In 1996–97, it provided three kilograms in edible weight of fresh and frozen fish for every Australian. However, production from the AFZ is insignificant by world standards. This reflects low productivity of the oceans rather than under-exploitation of the resource. However, while some species are currently considered to be overharvested, some fish resources such as albacore and southern whiting are not being used optimally.

Over 3,000 species of marine and freshwater fish, and at least an equal number of crustacean and mollusc species, occur in and around Australia. Less than 600 of these are commercially exploited. Australia's major commercially exploited species are prawns, rock lobster, abalone, tuna, other fin fish, scallops, and edible and pearl oysters. Australian fishing operators concentrate their efforts on estuarine, coastal, pelagic (surface) species and demersal (bottom living) species that occur on the continental shelf.

The level of fishing activity has increased over the last decade to the point where almost all the major known fish, crustacean and mollusc resources are fully exploited. Some major fisheries such as southern bluefin tuna, gemfish and shark have suffered serious biological depletion.

Aquaculture, or 'fish farming', is an alternative to harvesting the naturally occurring fish stocks and has considerable potential as a means of ensuring sustainability of harvesting yields. Aquaculture industries are established in all States, with species involved ranging from pearl oysters to freshwater trout. Aquaculture has experienced rapid growth over recent years, with the value of production rising from \$188.0m in 1989–90 to \$403.8m in 1996–97.

Australia has enjoyed a relatively long history of success in the farming of the Sydney rock oyster. Pearl culture operations, prawn, barramundi, freshwater crayfish and ornamental fish farming

are well established. The production of juveniles of several species of fin fish, molluscs and crustaceans has been undertaken for some years, initially for restocking wild populations and subsequently for grow-out operations. As in many other developed countries, there has been a surge of interest and investment in many types of aquatic farms over the last decade. Notable successes are the salmon industry in Tasmania and commercial cultivation of the Pacific oyster, blue mussel and rainbow trout, and the growing of southern bluefin tuna.

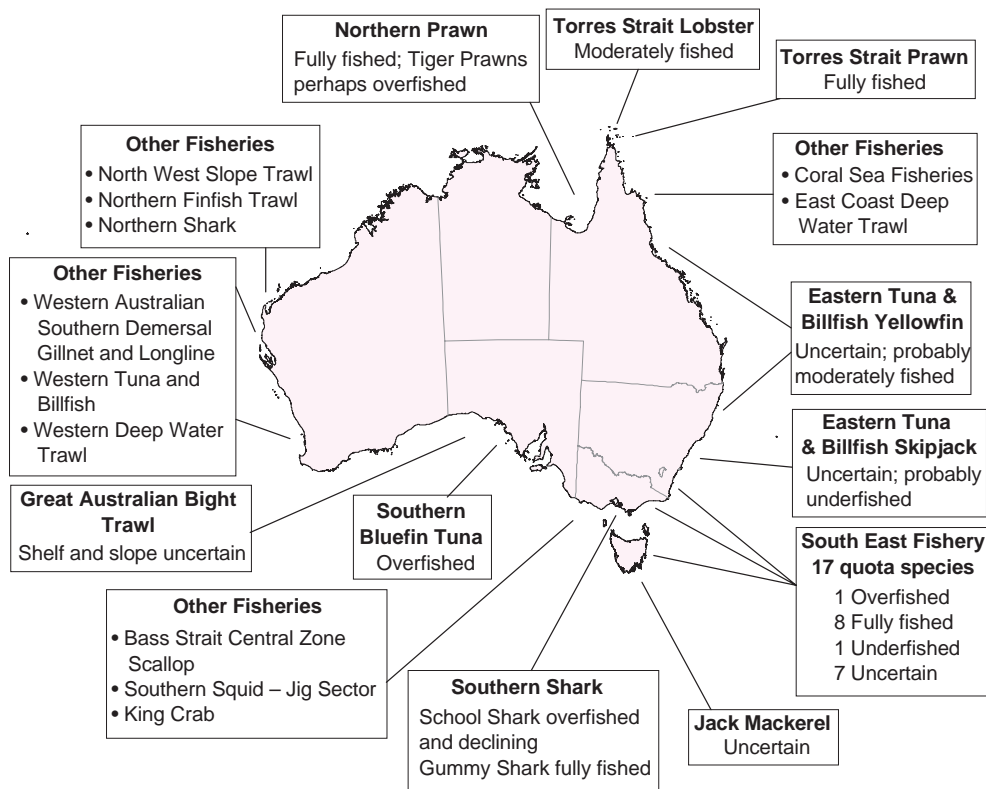
Developmental work is taking place in a number of areas including in a range of fin fish, freshwater crayfish (marron), mussels and algae. Research is continuing into the hatchery rearing of species such as abalone, scallops, giant clams, and flat and pearl oysters. Over half by value of the established aquaculture output goes to markets other than for direct consumption.

However, the output of the newer industries goes mainly to markets for direct consumption.

In March 1994, the Commonwealth Government released the *National Strategy on Aquaculture in Australia*. The development of the Strategy was a cooperative process, involving government at the national and State/Territory levels, as well as industry, and other interested parties. The Strategy provides a framework for planning the sustainable growth and development of aquaculture at the National, State/Territory, regional and enterprise levels. In June 1997, an Implementation Review of the Aquaculture Strategy assessed progress that had been made in implementing specific goals of the Strategy and highlighted those areas that still require action.

The status of Australia's Commonwealth or jointly managed fisheries resources is summarised in map 16.5.

#### 16.5 STATUS OF COMMERCIAL OR JOINTLY MANAGED FISHERIES RESOURCES



Source: Bureau of Resource Sciences, 1995.

## Production, processing, and exports and imports of fisheries products

### Value of fisheries production

Table 16.6 shows the quantity and table 16.7 the gross value of the production of the Australian commercial fishing industry. Australian fisheries production covers total production from both Commonwealth and State managed fisheries and from aquaculture. Gross value of production is the value placed on recorded production at the wholesale price realised in the principal markets. In general, the principal markets are the metropolitan markets in each State. However, in cases where commodities are consumed locally or where they become raw material for a secondary industry, these points are treated as the principal markets. (As the value of materials used in the course of production is not available, it is not possible to show net values.)

The gross value of Australian fisheries production rose by 4% in 1996–97, to \$1.76b

(table 16.8) contrasting with a 7% decrease in the previous year. Gross value of pearl production more than made up for earlier losses with an increase in 1996–97 of 41%. Tuna and rock lobster rose 11% and 10% respectively (Table 16.9).

In contrast to the increase in the gross value of fisheries production, the quantity of production fell by 6.9% in 1996–97 (table 16.10).

Commonwealth fisheries are those managed for the Commonwealth Government by the Australian Fisheries Management Authority. State Governments manage inland fisheries and aquaculture in addition to those salt water fisheries not managed by the Commonwealth. The distribution of the management of fisheries between the Commonwealth and the States is determined following consultations held under the Offshore Constitutional Settlement Agreement.

Commonwealth fisheries accounted for 18% of the total value of Australian fisheries production in 1996–97 (table 16.7).

**16.6 AUSTRALIAN FISHERIES PRODUCTION, By State(a)—1995–96**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	C'wealth(b)	Aust.
	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes
<b>Fish</b>									
Tuna	—	—	—	2 089	17	—	10	(c)13 618	(d)12 834
Other	14 204	6 591	12 538	7 161	26 699	9 728	2 896	(e)34 174	113 991
<b>Total</b>	<b>14 204</b>	<b>6 591</b>	<b>12 538</b>	<b>9 250</b>	<b>26 716</b>	<b>9 728</b>	<b>2 906</b>	<b>47 792</b>	<b>126 825</b>
<b>Crustaceans</b>									
Prawns	2 120	2	9 625	2 024	3 995	—	—	(f)10 090	27 856
Rock lobster	96	458	718	2 528	9 979	1 766	—	191	15 736
Other	937	144	3 774	581	1 263	77	454	239	7 469
<b>Total</b>	<b>3 153</b>	<b>604</b>	<b>14 117</b>	<b>5 133</b>	<b>15 237</b>	<b>1 843</b>	<b>454</b>	<b>10 521</b>	<b>51 061</b>
<b>Molluscs</b>									
Abalone	335	1 453	—	903	323	2 095	—	—	5 109
Scallops	1	575	3 036	—	1 969	—	4	3 518	9 102
Oysters	(g)5 021	—	264	1 359	—	3 800	—	—	10 444
Other	1 574	916	194	1 302	428	350	132	(h)3 128	8 025
<b>Total</b>	<b>6 931</b>	<b>2 944</b>	<b>3 494</b>	<b>3 564</b>	<b>2 720</b>	<b>6 245</b>	<b>135</b>	<b>6 646</b>	<b>32 680</b>
<b>Total quantity</b>	<b>24 288</b>	<b>10 139</b>	<b>30 150</b>	<b>17 947</b>	<b>44 673</b>	<b>17 816</b>	<b>3 496</b>	<b>64 959</b>	<b>210 567</b>

(a) State totals include estimates of aquaculture production, but exclude hatchery and inland commercial fishery production.

(b) Total includes all fisheries under federal jurisdiction. (c) Includes the southern bluefin, east coast and purse seine tuna fisheries. (d) Total has been adjusted to allow for southern bluefin tuna caught in the Commonwealth southern bluefin tuna fishery, as an input to farms in South Australia. (e) Includes the fish component of the south east trawl, south east non-trawl, Great Australian Bight, southern shark and Torres Strait fisheries. (f) Includes the northern prawn, Torres Strait, south east and other fisheries. (g) Assumed to be unchanged from previous year. (h) Includes squid, octopus and cuttlefish from the south east and Great Australian Bight fisheries, and pearl oyster from the Torres Strait fishery.

Source: Australian Bureau of Agricultural and Resource Economics.

**16.7 GROSS VALUE OF AUSTRALIAN FISHERIES PRODUCTION, By State(a)—1995–96**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	C'wealth(b)	Aust.
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Fish</b>									
Tuna	—	—	—	40 200	44	—	48	(c)71 231	(d)94 123
Other	36 871	24 979	66 777	17 385	46 678	65 033	10 995	(e)91 267	359 984
<b>Total</b>	<b>36 871</b>	<b>24 979</b>	<b>66 777</b>	<b>57 585</b>	<b>46 722</b>	<b>65 033</b>	<b>11 043</b>	<b>162 497</b>	<b>454 108</b>
<b>Crustaceans</b>									
Prawns	22 900	13	126 422	25 151	50 155	—	—	(f)118 953	343 595
Rock lobster	3 452	14 547	7 181	71 379	254 611	51 784	—	6 112	409 066
Other	6 448	2 280	30 132	2 813	7 108	1 458	5 382	1 720	57 341
<b>Total</b>	<b>32 800</b>	<b>16 840</b>	<b>163 736</b>	<b>99 343</b>	<b>311 874</b>	<b>53 242</b>	<b>5 382</b>	<b>126 756</b>	<b>810 002</b>
<b>Molluscs</b>									
Abalone	11 068	41 997	—	25 184	10 606	50 990	—	—	139 845
Scallops	2	1 150	24 289	—	13 783	—	13	14 197	53 434
Oysters	(g)28 073	—	519	5 816	—	19 000	—	—	53 408
Other	4 777	2 374	679	3 194	185 537	1 225	45 790	(h)7 125	250 701
<b>Total</b>	<b>43 919</b>	<b>45 521</b>	<b>25 487</b>	<b>34 194</b>	<b>209 926</b>	<b>71 215</b>	<b>45 803</b>	<b>21 322</b>	<b>497 388</b>
<b>Total value</b>	<b>113 590</b>	<b>87 340</b>	<b>256 000</b>	<b>191 122</b>	<b>568 522</b>	<b>189 490</b>	<b>62 228</b>	<b>310 605</b>	<b>(d)1 761 497</b>

(a) State totals include estimates of aquaculture production, but exclude hatchery and inland commercial fishery production.

(b) Total includes all fisheries under federal jurisdiction. (c) Includes the southern bluefin, east coast and purse seine tuna fisheries. (d) Total has been adjusted to allow for southern bluefin tuna caught in the Commonwealth southern bluefin tuna fishery, as an input to farms in South Australia. (e) Includes the fish component of the south east trawl, south east non-trawl, Great Australian Bight, southern shark and Torres Strait fisheries. (f) Includes the northern prawn, Torres Strait, south east and other fisheries. (g) Assumed to be unchanged from previous year. (h) Includes squid, octopus and cuttlefish from the south east and Great Australian Bight fisheries, and pearl oyster from the Torres Strait fishery.

Source: Australian Bureau of Agricultural and Resource Economics.

**16.8 GROSS VALUE OF FISHERIES PRODUCTION**

	Value
	\$m
1978–79	279
1979–80	326
1980–81	330
1981–82	344
1982–83	423
1983–84	449
1984–85	522
1985–86	635
1986–87	702
1987–88	828
1988–89	1 022
1989–90	1 092
1990–91	1 223
1991–92	1 376
1992–93	1 493
1993–94	1 679
1994–95	1 813
1995–96	1 700
1996–97(a)	1 761

(a) Estimate only.

Source: Australian Bureau of Agricultural and Resource Economics.

**16.9 GROSS VALUE OF SELECTED MAJOR FISHERIES CATEGORIES**

	1994–95	1995–96	1996–97(a)
	\$m	\$m	\$m
Prawns	368	366	344
Rock lobster	450	372	409
Tuna	130	85	94
Other fin fish	336	358	360
Abalone	145	142	140
Scallops	64	71	53
Oysters	48	52	53
Pearls	143	121	171
Other(b)	130	132	137
<b>Total</b>	<b>1 812</b>	<b>1 700</b>	<b>1 761</b>

(a) Estimate only. (b) Other fisheries production not elsewhere included.

Source: Australian Bureau of Agricultural and Resource Economics.

**16.10 AUSTRALIAN FISHERIES PRODUCTION,  
By Category(a)**

	1994–95	1995–96	1996–97
	tonnes	tonnes	tonnes
<b>Fish</b>			
Tuna	8 682	9 240	12 834
Other	127 489	125 778	113 991
<i>Total</i>	<i>136 171</i>	<i>135 018</i>	<i>126 825</i>
<b>Crustaceans</b>			
Prawns	27 965	29 186	27 856
Rock lobster	16 266	15 781	15 736
Other	7 871	8 060	7 469
<i>Total</i>	<i>52 102</i>	<i>53 027</i>	<i>51 061</i>
<b>Molluscs</b>			
Abalone	5 204	5 408	5 109
Scallops	15 415	15 929	9 102
Oysters	9 426	10 061	10 444
Other	7 464	6 752	8 025
<i>Total</i>	<i>37 509</i>	<i>38 149</i>	<i>32 680</i>
<b>Total</b>	<b>225 781</b>	<b>226 195</b>	<b>210 567</b>

(a) Includes an estimate for aquaculture production, but excludes production from inland commercial fisheries.

Source: Australian Bureau of Agricultural and Resource Economics.

The value of Australian aquaculture production also increased in 1996–97, by \$56.2m (16%) (table 16.11). Aquaculture accounted for 23% of the total value of Australian fisheries production in 1996–97, up slightly from its share of 20% in the previous year. The increase in the value of aquaculture production was caused predominantly by a \$51.8m (39%) rise in the value of pearl oyster production.

Table 16.12 shows the volume of Australian aquaculture production for the three years 1994–95 to 1996–97. During this period, production increased 12% to 26,850 tonnes, a rise of 2% over the 1995–96 level. Edible oysters recorded the most aquaculture production in 1996–97 with 10,444 tonnes (up 4%) while salmon production remained unchanged at 7,647 tonnes.

**16.11 GROSS VALUE OF AQUACULTURE  
PRODUCTION(a)**

	1994–95	1995–96	1996–97
	\$m	\$m	\$m
<b>Fish</b>			
Salmon	55.7	58.5	58.5
Tuna	38.0	39.9	40.2
Trout	8.1	14.3	12.8
Other(b)	7.3	10.2	12.6
<i>Total</i>	<i>109.2</i>	<i>123.0</i>	<i>124.1</i>
<b>Crustaceans</b>			
Prawn	28.4	33.0	34.9
Other(c)	4.6	4.6	4.1
<i>Total</i>	<i>33.0</i>	<i>37.6</i>	<i>39.0</i>
<b>Molluscs</b>			
Pearl oysters	153.0	131.3	183.1
Edible oysters	47.6	51.5	53.4
Other(d)	2.6	4.2	4.2
<i>Total</i>	<i>203.2</i>	<i>187.0</i>	<i>240.7</i>
<b>Total</b>	<b>345.5</b>	<b>347.6</b>	<b>(e)403.8</b>

(a) Excludes aquarium fish, hatcheries production, crocodiles, microalgae, and aquarium worms. (b) Includes eels and other native fish. (c) Includes crabs and brine shrimp. (d) Includes mussels, scallops and giant clams. (e) Only the total includes Northern Territory production.

Source: Australian Bureau of Agricultural and Resource Economics.

**16.12 AUSTRALIAN AQUACULTURE  
PRODUCTION**

	1994–95	1995–96	1996–97
	tonnes	tonnes	tonnes
<b>Fish</b>			
Salmon	7 285	7 647	7 647
Trout	1 779	2 333	2 149
Tuna	1 927	2 013	2 089
Other	742	1 058	1 141
<i>Total(a)</i>	<i>11 733</i>	<i>13 051</i>	<i>13 026</i>
<b>Crustaceans</b>			
Prawn	1 673	1 565	1 626
Yabbies	257	173	192
Marron	22	25	26
Other	66	95	41
<i>Total(b)</i>	<i>2 018</i>	<i>1 858</i>	<i>1 885</i>
<b>Molluscs</b>			
Edible oysters	9 426	10 061	10 444
Pearl oysters	—	—	—
Other	832	1 375	1 495
<i>Total(c)</i>	<i>10 258</i>	<i>11 436</i>	<i>11 939</i>
<b>Total</b>	<b>24 009</b>	<b>26 345</b>	<b>26 850</b>

(a) Includes eels and other native fish. (b) Includes crabs and brine shrimp. (c) Includes mussels, scallops and giant clams.

Source: Australian Bureau of Agricultural and Resource Economics.

### Processing of fish, crustaceans and molluscs

There is very little value added processing of fish products in Australia. Processing establishments vary in size, scope of operations and sophistication of technologies employed. The majority of establishments undertake only the most basic cleaning, filleting, chilling, freezing and packaging processes, but some have the capacity for significant product transformation. Much of the value that is added to the catch is due to correct handling and quick delivery by air to local or overseas markets.

Fish, crustaceans and molluscs intended for export are processed in establishments registered under the Export (Fish) Regulations. Edible fish for local consumption are mainly sent fresh-chilled to markets.

### Exports and imports

Exports of fisheries products come under Commonwealth jurisdiction, while domestic market activity is the responsibility of the States and Territories.

A significant proportion of Australian fisheries production (edible and non-edible) is exported. In 1996–97 the value of exports was \$1.29b (table 16.13), about 73% of the total value of Australian production. The 2% decline in the value of exports compared to 1995–96 is largely attributable to falls in prawn exports. Rock lobster (\$453m) remains Australia's highest value

fisheries export, accounting for 35% of the total for 1996–97. Pearls were the next largest fisheries export at \$192m, despite a 2% fall in value compared with 1995–96. Prawn exports fell by 18%, making them the third largest export earner at \$184m.

Japan continues to be the major destination for Australian exports of fisheries products, accounting for 35% of the total value in 1996–97. Hong Kong and Taiwan account for the next largest shares of exported Australian fisheries products with 18% and 17% respectively.

In 1996–97, exports of fisheries products to China were valued at \$53m, which was more than twice the level of the previous year and nine times the value in 1994–95. Western Australia continues to have the highest value of seafood exports (accounting for 34% of the total value in 1996–97).

The total value of Australian imports of fisheries products increased in 1996–97, to an estimated \$701m (table 16.14), although Australia remains a net exporter of fisheries products. Prawns continue to be the single main product imported, accounting for 22% of the total. The second largest imported single item was frozen fillets, which represented 18% of the total value of imports of fisheries products. The main countries of origin of these imports in 1996–97 were Thailand (26% of total import value), New Zealand (17%) and the United States of America (7%).

**16.13 DESTINATION OF EXPORTS OF AUSTRALIAN FISHERIES PRODUCTS(a)**

Country	1994–95		1995–96		1996–97	
	\$m	%	\$m	%	\$m	%
Japan	556	41.0	491	37.4	447	34.6
Hong Kong	269	19.8	234	17.8	236	18.3
Taiwan	203	15.0	219	16.7	217	16.8
USA	74	5.5	64	4.9	76	5.9
China	6	0.5	21	1.6	53	4.1
Singapore	41	3.0	45	3.5	40	3.1
New Zealand	8	0.6	11	0.8	12	0.9
Spain	14	1.0	15	1.1	10	0.8
South Korea	10	0.7	13	1.0	10	0.8
Thailand	13	1.0	13	1.0	8	0.6
Switzerland	7	0.5	8	0.6	8	0.6
Germany	4	0.3	6	0.4	8	0.6
France	13	1.0	13	1.0	4	0.3
Other	136	10.1	159	12.1	162	12.6
<b>Total</b>	<b>1 358</b>	<b>100.0</b>	<b>1 312</b>	<b>100.0</b>	<b>1 290</b>	<b>100.0</b>

(a) Includes non-edible products (e.g. marine fats and oils, fish meal, pearls and ornamental fish).

Source: *International Trade database*.

**16.14 SOURCE OF AUSTRALIAN IMPORTS OF FISHERIES PRODUCTS(a)**

Country	1994–95		1995–96		1996–97p	
	\$m	%	\$m	%	\$m	%
Thailand	168	25.0	173	25.4	185	26.4
New Zealand	120	17.8	123	18.2	119	16.9
USA	48	7.1	40	5.9	48	6.9
Malaysia	39	5.8	31	4.5	27	3.8
Japan	21	3.1	21	3.2	23	3.3
Canada	24	3.5	30	4.4	19	2.8
Taiwan	13	1.9	17	2.5	18	2.6
Chile	14	2.1	18	2.6	17	2.4
Peru	21	3.2	9	1.4	14	2.1
Singapore	13	2.0	14	2.1	13	1.8
Cayman Islands	13	2.0	13	1.9	13	1.9
South Africa	12	1.8	12	1.8	13	1.9
China	10	1.6	13	1.9	9	1.3
Indonesia	9	1.4	8	1.2	9	1.3
Denmark	9	1.4	9	1.4	8	1.1
Norway	9	1.3	8	1.1	8	1.1
South Korea	11	1.6	7	1.0	7	1.1
Other	119	17.6	133	19.5	151	21.5
<b>Total</b>	<b>673</b>	<b>100.0</b>	<b>679</b>	<b>100.0</b>	<b>701</b>	<b>100.0</b>

(a) Includes non-edible products (e.g. marine fats and oils, fish meal, pearls and ornamental fish).

Source: *International Trade data base*.

## Fisheries legislation and territorial arrangements

The Commonwealth Parliament has enacted a number of laws governing fisheries in the Australian Fishing Zone (AFZ). Where appropriate arrangements under the Offshore Constitutional Settlement (OCS) have been concluded with the States or the Northern Territory, these laws can also have application in coastal waters.

The fisheries laws of the States and the Northern Territory apply to fishing in inland waters and, in the absence of OCS arrangements, to marine waters up to three nautical miles seaward of the territorial sea baseline. Where appropriate OCS arrangements have been concluded with the Commonwealth, these laws can also cover a part or the whole of the AFZ adjacent to that State or Territory.

Commonwealth and State/Territory fisheries laws enable the management of commercial fisheries. They generally provide for this to be done through licensing regimes, fisheries notices or individual fishery management plans.

### **Fisheries Management Act 1991 and the AFZ**

The Commonwealth *Fisheries Management Act 1991* applies to commercial fishing for swimming and sedentary species in the AFZ, excluding any

waters that have been declared excepted waters. The AFZ is the area of waters generally between three and 200 nautical miles seaward of the territorial sea baseline of Australia and its external territories, excluding waters falling within the exclusive economic zone of another country, and covers a total of 8.9 million km<sup>2</sup>. The establishment of the AFZ in 1979 brought portions of oceanic tuna stocks, and demersal and pelagic fish stocks previously exploited by foreign fishing vessels, under Australian control.

Fishery management plans are central to the Act and are to contain all essential rules applying to the management of a fishery. A management plan normally operates through a system of statutory fishing rights, which allows long term access to the fishery. The Act also provides for limited term fishing permits, which are primarily designed for the management of fish resources that are not yet under a management plan. Individual transferable quotas (ITQs) are used as the preferred tool to achieve a reduction in fishing levels. A particular fishery is assigned a total allowable catch, and the market for ITQs will determine the most efficient allocation of resources.

Australia has an international obligation, under the United Nations Convention on the Law of the Sea, to allow foreign nations access to resources within the AFZ that are surplus to



domestic fisheries requirements and where such access does not conflict with Australian management and development objectives. To facilitate the process, the Act allows Australia to make bilateral agreements or joint venture arrangements with the government or commercial interests of another country under which foreign fishing licences will be granted to boats from that country.

In 1997, Japan was the only country maintaining a licensed foreign fishing presence in the AFZ. Japanese vessels fished certain areas of the AFZ under an annually renewable bilateral access agreement between the Japanese Government and the Australian Government. The main species caught by Japanese vessels in the AFZ are yellowfin, southern bluefin, and bigeye and albacore tunas.

Australia, Japan and New Zealand are parties to the Convention for the Conservation of Southern Bluefin Tuna (CCSBT), which came into force in 1994. As part of its conservation management responsibilities for the global southern bluefin tuna industry, the CCSBT Commission annually determines a total allowable catch for the fishery and allocates this between the three CCSBT parties in the form of national quotas.

In 1997, Australia had maritime delimitation agreements with Papua New Guinea, the Solomon Islands and France. In addition, a maritime delimitation treaty was signed with Indonesia (a Provisional Fisheries Surveillance and Enforcement Line having been agreed in 1981) and will come into force when ratified by both countries. Australia will be continuing negotiations with New Zealand in 1998–99.

The Treaty on Fisheries between the Governments of Certain Pacific Island States and the Government of the United States of America (USA) forms the Schedule to the Act. The effect of this is that US tuna boats are given treaty licences in accordance with the provisions of the Treaty.

Whales are a protected species in the AFZ.

### **Australian Fisheries Management Authority**

The *Fisheries Administration Act 1991* establishes the Australian Fisheries Management Authority (AFMA) and prescribes its objectives. These are:

- implementing efficient and cost-effective fisheries management on behalf of the Commonwealth;
- ensuring that the exploitation of fisheries resources and the carrying on of any related activities are conducted in a manner consistent with the principles of ecologically sustainable development, in particular the need to have regard to the impact of fishing activities on non-target species and the marine environment;
- maximising economic efficiency in the exploitation of fisheries resources;
- ensuring accountability to the fishing industry and to the Australian community in AFMA's management of fisheries resources; and
- achieving government targets in relation to the recovery of the cost of AFMA.

The Act specifies AFMA's functions, which include a duty to engage in appropriate consultation and to devise and implement management plans, adjustment programs and exploratory/feasibility fishing programs. AFMA is also to establish priorities for management related research and arrange for such research to be undertaken. AFMA's management responsibilities include arrangements with States and Territories. Under the Fisheries Management Act, AFMA is given additional functions in areas such as keeping a register of statutory fishing rights, surveillance and enforcement.

### **Other legislation**

The *Fishing Levy Act 1991*, *Foreign Fishing Licences Levy Act 1991* and *Fisheries Agreements (Payments) Act 1991* enable the imposition of management levies and access fees payable by Australian and foreign fishermen, foreign governments and foreign commercial interests. The *Statutory Fishing Rights Charge Act 1991* enables a charge to be levied on the grant of new fishing rights.

The *Torres Strait Fisheries Act 1984* gives effect in Australian law to the fisheries elements of the Torres Strait Treaty. The Act applies in the area of Australian jurisdiction in the Torres Strait Protected Zone, and in areas outside but near that zone that have been proclaimed in respect of particular fisheries which Australia and Papua New Guinea have agreed to manage jointly under the treaty or which are referred to in the treaty.



## Fisheries research

The main aim of fisheries research in Australia is to provide a background of biological, technical and economic information which will provide guidance for the efficient and sustainable utilisation of fisheries resources. Much of the research already undertaken has been directed at formulating recommendations for management of various fisheries. Research work, including feasibility fishing projects involving foreign fishing vessels, is also carried out and is expected to lead to the development of new fisheries, the expansion of under-exploited fisheries, greater economy in operations and the use of more efficient equipment and methods.

The Fisheries Research and Development Corporation (FRDC) was established in July 1991 by Regulation under the *Primary Industries and Energy Research and Development Act 1989*. Its objectives include:

- increasing the economic, environmental or social benefits to members of the Australian fishing and aquaculture industry and to the community generally by improving the production, processing, storage, transport or marketing of fish and fish products; and
- achieving the sustainable use and management of fisheries resources.

FRDC investigates and evaluates the requirements for research and development in relation to the fishing industry; coordinates and funds such research and development activities; and facilitates the dissemination, adoption and commercialisation of results.

FRDC is funded by an annual unmatched grant equal to 0.5% of GVP (the average gross value of fisheries production over the three immediately preceding financial years) and by research levies collected from the fishing industry which the Government matches to a maximum of 0.25% of GVP. In 1996–97, the Commonwealth Government provided about \$11.3m to FRDC. Industry provided an additional \$2.5m.

Organisations in Australia at present engaged in research into fisheries matters are:

- CSIRO Division of Fisheries Research, which has its headquarters and main laboratory in Tasmania, and regional laboratories in Western Australia and Queensland (fisheries science);
- CSIRO Division of Oceanography, which has its headquarters and laboratory in Tasmania;
- CSIRO Division of Food Research, which conducts research into handling, storage, processing and transportation of fish at its laboratory in Tasmania;
- Australian Fisheries Service, Agriculture, Fisheries and Forestry—Australia, Canberra;
- Bureau of Resource Sciences, Agriculture, Fisheries and Forestry—Australia, Canberra;
- Australian Bureau of Agricultural and Resource Economics, Agriculture, Fisheries and Forestry—Australia, Canberra;
- State and Territory fisheries departments (research vessels are operated by all States);
- Great Barrier Reef Marine Park Authority (GBRMPA) located in universities in Townsville and Canberra; and
- private fishing companies (surveys of fisheries resources, research into handling, processing and marketing).

## Aquaculture

Aquaculture is one of Australia's fastest growing primary industries. As indicated under *Fisheries resources* above, in 1996–97 the annual farmgate value of production was \$403.8m, compared with \$188.0m in 1989–90. The major sectors contributing to this growth were pearl and edible oysters, tuna, salmon, prawns and southern bluefin tuna.

Australian aquaculture is expected to continue to show strong growth for the next 10 years and, on current estimates, the value of production will be in excess of \$1b by the end of this period. The industry provides regional development and employment opportunities in rural Australia, as well as contributing to export growth.

In 1994, the National Strategy for Aquaculture in Australia was released, and the first review of this strategy has occurred. This review has shown important progress against the following key goals:

- industry structure and organisation;
- relationship between aquaculture and capture fisheries;
- government framework;
- environmental management;
- water and land use planning;

- research and development;
- marketing and product development;
- education and training;
- extension services; and
- quarantine and movement.

The operational responsibility for the development of aquaculture in Australia rests with State and Territory Governments. A number of States have aquaculture and coastal development plans in place. These plans take

into account the needs of the multiple user groups and provide a focus for aquaculture as an industry and as a legitimate user of water and land resources.

Aquaculture provides a basis for improved biological understanding of Australia's native marine and freshwater species and can be used to re-establish populations of endangered aquatic species. Aquaculture may also improve the catch in both recreational and commercial fisheries through restocking programs.

## Bibliography

### ABS publications

There are no ABS publications devoted to forestry and fishery statistics for Australia as a whole. Forestry and fishery statistics are available in unpublished ABS data, which can be obtained on request, or in publications on broader subjects:

*Apparent Consumption of Foodstuff and Nutrients, Australia* (4306.0).

*Business Operations and Industry Performance* (8140.0).

*Manufacturing Industry, Australia* (8221.0).

### Other publications

Australian Bureau of Agricultural and Resource Economics

— *Agriculture and Resources Quarterly* (various issues).

— *Australian Fisheries Statistics, 1997*.

— *Quarterly Forest Products Statistics* (various issues).

Bureau of Resource Sciences

— *National Forest Inventory, 1997*.

— *National Plantation Inventory, 1997*.

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## Introduction

Mining, as defined in the 1993 edition of the *Australian and New Zealand Standard Industrial Classification* (ANZSIC), broadly relates to the extraction of minerals occurring naturally as solids such as coal and ores; liquids such as crude petroleum; or gases such as natural gas. First stage processing of minerals and mineral extracts, while closely related to the mining industry, is included as part of the manufacturing industry.

The mining industry contributed \$18,668m or 4% of Australia's Gross Domestic Product (GDP) in 1995–96.

Table 14.10 in the section *Mineral account for Australia* in *Chapter 14, Environment* quantifies the changes in the volumes of selected mineral commodities in Australia between 1995 and 1996.

## Main features of 1995–96

Table 17.1 provides a summary of the operations of mining industries in 1995–96. Turnover in the mining industry sector rose by 11% to \$32,084m, while employment in the sector increased by 3% to 56,810 persons between June 1995 to June 1996.

Turnover rose in the Coal industry by \$939m (10%) to \$10,281m and in the Gold mining industry by \$505m (12%) to \$4,622m.

Other metal ore mining showed the largest percentage increase, up 30% to \$1,386m.

Other industries to show increases in turnover were Copper, up 29% to \$1,313m; Mineral sand mining, up 24% to \$781m; Bauxite, up 16% to \$995m; Iron ore, up 14% to \$3,522m; and Silver-lead-zinc ore, up 8% to \$1,145m.

Despite production decreases in the Victorian fields there was an overall increase in turnover for the Australian Oil and gas extraction industry, by 5% to \$8,039m.

The Coal mining industry was the largest mining industry, accounting for 32% of total turnover for the mining industries. Other significant industries in terms of turnover were Oil and gas extraction, 25% and Gold ore mining, 14%.

Table 17.2 contains a summary of the operations of mining industries in 1995–96 by State and Territory.

Table 17.3 shows industry gross product at the industry subdivision level over the last five years.

**17.1 MINING, Summary of Operations by Industry—1995–96**

	Employment at 30 June(a)	Wages and salaries(b)	Turnover(c)	Stocks		Purchases and selected expenses	Value added	Net capital expenditure
				Open	Close			
	no.	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Coal mining	26 017	2 011	10 281	742	818	4 820	5 537	1 193
Oil and gas extraction	651	329	8 039	242	263	747	7 312	1 441
Metal ore mining								
Iron ore mining	6 040	405	3 522	303	329	1 262	2 287	465
Bauxite mining	1 792	95	995	58	77	301	712	160
Copper ore mining	2 676	146	1 313	158	159	477	837	232
Gold ore mining	8 114	451	4 622	476	566	2 551	2 160	754
Mineral sand mining	1 949	91	781	138	160	383	420	203
Silver-lead-zinc ore mining	3 496	223	1 145	123	140	583	578	140
Other(d)	2 427	157	1 386	287	277	591	784	275
Total metal ore mining	26 494	1 567	13 764	1 545	1 707	6 149	7 778	2 228
<b>Total mining 1995–96</b>	<b>56 810</b>	<b>3 907</b>	<b>32 084</b>	<b>2 529</b>	<b>2 789</b>	<b>11 716</b>	<b>20 628</b>	<b>4 862</b>
Total mining 1994–95	55 014	3 594	28 882	2 517	2 508	10 219	18 654	4 654

(a) Includes working proprietors. (b) Excludes amounts drawn by working proprietors. (c) Includes transfers out to other establishments of the same management unit where appropriate. (d) Includes nickel ores, tin ores, uranium ores and non-ferrous metal ores n.e.c.

Source: *Australian Mining Industry* (8414.0).

**17.2 MINING, Summary of Operations by State/Territory—1995–96**

	Employment at 30 June(a)	Wages and salaries(b)	Turnover(c)	Stocks		Purchases and selected expenses	Value added	Net capital expenditure
				Open	Close			
	no.	\$m	\$m	\$m	\$m	\$m	\$m	\$m
NSW	15 760	1 162	5 082	363	463	2 426	2 756	760
Vic.	1 900	115	3 278	52	52	242	3 036	439
Qld	15 413	1 122	7 381	689	696	3 430	3 958	647
SA	2 006	104	1 102	92	105	240	875	175
WA	18 715	1 210	13 573	1 065	1 192	4 778	8 921	2 609
Tas.	1 206	71	376	49	55	157	225	126
NT	1 810	122	1 293	219	225	443	857	105
<b>Aust.</b>	<b>56 810</b>	<b>3 907</b>	<b>32 084</b>	<b>2 529</b>	<b>2 789</b>	<b>11 716</b>	<b>20 628</b>	<b>4 862</b>

(a) Includes working proprietors. (b) Excludes amounts drawn by working proprietors. (c) Includes transfers out to other establishments of the same management unit where appropriate.

Source: Australian Mining Industry (8414.0).

**17.3 MINING, Gross Product by Industry**

Year	Coal mining	Oil and gas extraction	Metal ore mining	Total coal mining, oil and gas extraction and metal ore mining
	\$m	\$m	\$m	\$m
1991–92	3 603	5 797	5 647	<b>15 046</b>
1992–93	3 795	6 427	5 275	<b>15 496</b>
1993–94	4 001	6 089	5 540	<b>15 630</b>
1994–95	3 673	5 814	5 990	<b>15 476</b>
1995–96	4 494	6 399	7 021	<b>17 914</b>

Source: Australian Mining Industry (8414.0).

**Mineral production**

The value of production in the Metallic minerals, Coal, and Oil and gas industries for 1995–96 was \$28,784m, an increase of 8% over the previous year (table 17.4). Metallic minerals accounted for the largest proportion (44%) of the total value of production, while Oil and gas, and Coal were each 28% of the total.

The increase in the value of mineral production in 1995–96 was primarily due to growth in Metallic minerals, which rose 8% to \$12,708m.

Falls in the value of Metallic minerals production occurred in Victoria, South Australia and Tasmania, while all other States recorded rises. Increases in both production and prices of most minerals contributed to the increases in value of production.

In terms of value, the two most important minerals were Gold and Iron ore, at \$4,541m and \$3,126m respectively, for a combined share of 60%.

Western Australia remained the most important mining State, accounting for both the largest share of Metallic minerals production with \$8,701m (68%), and the largest share of total mineral production with \$13,041m (45% of the total).

The value of production of the Oil and gas industry rose to \$8,070m from \$7,683m in 1994–95, an increase of \$387m or 5%, due primarily to increased production volume.

The value of coal production rose 9%, as a result of increased production volume and higher prices. The total value of the Coal industry was \$8,006m in 1995–96. Queensland and New South Wales are the major coal producing States, with 38% and 37% of production respectively.

In 1995–96, Australia remained the world's largest producer of bauxite (39% of the total volume of world production); diamonds (38%); lead (18%); and zircon, a mineral sands concentrate (56%).



## 17.4 MINERAL PRODUCTION, Selected Minerals, Australia

	Units	1991–92	1992–93	1993–94	1994–95	1995–96
<b>Metallic minerals</b>						
Bauxite	kilotonnes	34 788	40 946	43 306	45 384	50 724
Copper concentrate(a)	kilotonnes	915	1 254	1 322	9 405	1 297
Copper precipitate(b)	tonnes	6 203	8 174	16 192	18 888	19 838
Gold bullion (dore)(c)	kilograms	259 656	275 331	274 687	298 697	291 965
Iron ore(d)	kilotonnes	114 781	115 703	123 631	137 525	137 267
Lead concentrate	kilotonnes	858	856	873	766	774
Manganese ore(e)	kilotonnes	375	597	815	n.p.	1 298
Mineral sands(f)	kilotonnes	1 954	2 118	2 252	2 375	2 491
Uranium concentrate (U3O8)(a)	tonnes	2 901	1 342	1 457	n.a.	3 200
Zinc concentrate(g)	kilotonnes	1 927	2 011	1 890	1 699	1 295
<i>Total value of metallic minerals</i>	<i>\$m</i>	<i>(h)10 957</i>	<i>(h)10 920</i>	<i>(h)10 861</i>	<i>(h)11 715</i>	<i>12 708</i>
<b>Coal</b>						
Black coal	kilotonnes	176 570	177 970	177 874	191 903	194 492
Brown coal	kilotonnes	50 731	47 912	49 684	50 679	54 281
<i>Total value of coal</i>	<i>\$m</i>	<i>(i)7 216</i>	<i>(i)(j)7 585</i>	<i>(i)(j)7 418</i>	<i>(i)(j)7 340</i>	<i>(j)8 006</i>
<b>Oil &amp; gas</b>						
Crude oil (k)	megalitres	31 984	30 592	29 583	31 301	30 763
Natural gas(l)	gigalitres	16 289	16 631	15 959	17 486	19 169
Ethane	gigalitres	182	187	202	208	199
Propane(m)	megalitres	2 064	2 078	2 115	1 999	2 092
Butane(m)	megalitres	1 574	1 651	1 622	1 480	1 544
Liquefied natural gas	kilotonnes	4 250	4 922	5 732	6 888	7 346
<i>Total value of oil and gas</i>	<i>\$m</i>	<i>7 812</i>	<i>8 216</i>	<i>7 423</i>	<i>7 683</i>	<i>8 070</i>
<b>Total value of metallic minerals, coal, oil and gas</b>	<b>\$ million</b>	<b>25 985</b>	<b>26 721</b>	<b>25 702</b>	<b>26 738</b>	<b>28 784</b>

(a) Excludes South Australia. (b) Includes copper concentrate in other forms. (c) Includes alluvial gold. (d) Includes iron ore pellets. (e) Metallurgical grade. (f) Includes ilmenite, beneficiated ilmenite, leucocoxene, monazite, rutile, synthetic rutile and zircon. (g) Includes zinc-lead concentrate. (h) Includes Tasmanian coal production. (i) Excludes Tasmania. (j) Excludes briquettes. (k) Stabilised. Includes condensate. (l) Includes field and plant usage. (m) Excludes refinery production.

Source: Australian Mining Industry (8414.0).

## Exports

Australia is the world's largest exporter of black coal, iron ore, bauxite, lead, diamonds, zinc ores and concentrates and mineral sands; the second largest exporter of alumina and uranium; and the third largest exporter of aluminium and gold.

Exports of mining products rose in value by 11% in 1995–96 to \$16,523m, 22% of total merchandise exports.

The percentage contributions of the major mineral products to total merchandise exports have remained stable over the period 1990–91 to 1995–96. Black coal remains the largest single export item and the main mineral exported, with a value of \$7,771m in 1995–96, 10% of total merchandise exports. Other major exports were iron ore (\$2,863m, 4% of total merchandise exports), crude oil (\$1,593m, 2%), copper (\$486m, 1%), zinc ores (\$433m, 1%) and uranium (\$242m, less than 1%).

Commodities for which export earnings increased during 1995–96 included refined gold, which increased \$917m (20%), alumina \$486m (22%), aluminium \$206m (9%), and nickel \$181m (18%). The stronger export performance reflected both higher world prices and export volumes for most minerals.

Minerals experiencing a decline in export earnings in 1995–96 were crude oil and other refinery feedstock which fell \$51m (3%), diamonds \$40m (7%) and bauxite \$3m (3%).

Exports of mining products, together with basic manufactures of mineral origin, rose by 13% in 1995–96 to \$34,123m. However, as a proportion of total merchandise exports they remained stable at 45% in 1995–96. The major manufactured mineral products to be exported were alumina (\$2,717m, 4%) and aluminium (\$2,379m, 3%).

The petroleum sector also experienced rises in export earnings during 1995–96, with increased earnings for liquefied natural gas (LNG) of \$171m (14%), liquefied petroleum gas (LPG) \$35m (23%), and refined petroleum products \$214m (30%).

## Imports

Mineral resources imports were valued at \$3,201m in 1995–96, an increase of \$397m (14%) on the 1994–95 total of \$2,804m.

With the inclusion of basic manufactures of mineral origin, imports of mineral resources were valued at \$6,702m in 1995–96, a rise of \$562m (9%) on 1994–95. Contributors to the increase were: crude oil and other refinery feedstock, up \$560m (19%); petroleum refinery products, up \$89m (13%); and diamonds, up \$10m (9%). The increases were offset by small declines in all other commodities.

## Review of selected commodities

### Gold

Gold production (content of all minerals) in Australia during 1995–96 was 263,916 kg. Western Australia accounted for most of the production with 78%, followed by Queensland (11%), the Northern Territory (6%) and New South Wales (4%).

Gold was Australia's second biggest export earning commodity in 1995–96, accounting for 7% of total merchandise exports, at a value of \$5,540m. The main markets were Republic of Korea (\$2,187m), Singapore (\$1,174m) and Japan (\$872m).

The gold mining industry employed 8,114 people at the end of June 1996, 14% of total employment in the metallic minerals, coal, oil and gas industries, making it the second largest employer in the mining sector behind the coal industry.

Australia accounts for about 12% of estimated world gold production. South Africa, with 21% of the total, is the world's largest gold producer.

### Iron ore

Iron ore production in 1995–96 was 137.3 million tonnes, of which 92% or 126.2 million tonnes were exported. Iron ore mining employed 6,040 people at the end of June 1996.

Almost 97% of production takes place in Western Australia's Pilbara region. Iron ore is also mined in South Australia and Tasmania.

Iron ore accounted for \$2,863m or 4% of total merchandise exports in 1995–96. Japan was Australia's largest market, taking 45% of Australia's exports (in dollar terms). Other important markets were China (20%), Republic of Korea (15%), Taiwan (5%), the United Kingdom (5%) and Germany (4%).

### Bauxite and alumina

Australia is the world's largest bauxite and alumina producer, accounting for 39% of estimated world bauxite and alumina production. It is the fourth largest aluminium producer.

Bauxite mining employed 1,792 people nationally at the end of June 1996, with mines in Western Australia south of Perth, in the Northern Territory on the Gove Peninsula and in Queensland at Weipa. Generally the bauxite ore is not sold but is processed to alumina for sale or for conversion to aluminium. Alumina production reached 13.3 million tonnes in 1995–96, while refined aluminium production was 1.3 million tonnes.

In 1995–96, aluminium ranked fifth in value among the major commodity exports, with one million tonnes valued at \$2,720m or 4% of total merchandise exports. Alumina ranked sixth with 11 million tonnes valued at \$2,635m or 3% of total merchandise exports.

Japan was the major market for aluminium, taking 42% of exports; Northeast and Southeast Asia together (which includes Japan) accounted for over 89% of Australia's exports.

## Mineral sands

Mineral sands comprise ilmenite, leucoxene, rutile, monazite and zircon, which are produced from deposits on the east and west coasts of Australia. Australia was the world's largest producer of zircon (56%) in 1995–96.

The value of production increased by 32% to \$761.3m in 1995–96. For the same period, exports were valued at \$481m, a rise of 60% on the 1994–95 value.

Ilmenite, leucoxene and rutile are sources of titanium metal, and are used in the manufacture of paint and other pigments and as a coating on welding rod electrodes. Zircon is the major source of zirconium, which is a corrosion resistant metal used in nuclear reactors and chemical processing equipment.

Thorium is a radioactive mineral that is about three times as abundant as uranium, but occurs in fewer geological environments and in lower grade accumulation. It is used in incandescent gas mantles and as a fuel in nuclear reactors. Most of the world's resources of thorium occur in monazite, which is produced in Australia from titanium-bearing mineral sands. Exports from Australia of thorium and thorium-containing ores require the approval of the Minister for Primary Industries and Energy under the Customs (Prohibited Exports) Regulations.

## Diamonds

Australia is now the world's largest producer of diamonds (gem and industrial) with 38% of world production in 1995–96. Most of this was from the Argyle diamond mine in the Kimberley region of Western Australia. This mine commenced operations in December 1985 and is the world's biggest single producer of diamonds.

In 1995–96, 33.8 mega carats of diamonds (sorted and unsorted) were exported, with a value of \$531m. This represents a fall of 7% on the 1994–95 value.

Diamonds were first extracted in 1982 in Western Australia.

## Uranium

Australia has about 30% of the world's low-cost uranium reserves (excluding those in the current and former centrally planned economies). Deposits occur in the Northern Territory, Western Australia, South Australia and Queensland.

Australia's reasonably assured uranium resources, at December 1995, totalled 629,000 tonnes of uranium recoverable at less than \$US80 per kg of uranium.

The Australian Government no longer maintains its three mines policy with regard to uranium mining, which had limited the number of mines and prevented the licensing of new mines. However, restrictions on the export of uranium still apply.

The Ranger deposit was discovered in 1969, 250 km east of Darwin, and mining commenced in 1981. The Olympic Dam deposits were discovered in 1975 and mining commenced in 1988.

Production of uranium for 1995–96 was 5,050 tonnes, with 3,200 tonnes from Ranger and 1,850 tonnes from Olympic Dam.

All Australian uranium production exported is in the form of yellow cake, principally for use as fuel for nuclear power stations. Minor quantities not exported are used in medical, industrial and scientific applications.

Uranium oxide exports in 1995–96 were 5,286 tonnes, valued at \$242m.

All exports of Australian uranium are subject to stringent safeguards which provide assurance that none of the material is diverted from peaceful uses.

The *Nuclear Non-Proliferation (Safeguards) Act 1987* gives domestic effect to Australia's international nuclear non-proliferation obligations which require domestic legislation. The legislation establishes a system of permits for the possession and transport of nuclear material (defined to cover uranium, thorium and plutonium), and other physical items such as equipment and material used in nuclear reactors. The permit and related provisions also deal with the possession and communication of sensitive information about nuclear technology, in circumstances where that information is not already a matter of public record. The legislation is administered by the Australian Safeguards Office.

Australia maintains a small nuclear reactor for research and the manufacture of nuclear medicines. However, Australia has no nuclear power stations.

## Coal

Black coal is currently the largest source of primary energy in Australia, which has a ready availability of easily worked deposits of coal. The main black coal fields are located in New South Wales and Queensland, not far from the coast and the main centres of population.

Of Australia's identified resources of black coal, currently estimated at 68 gigatonnes, about 49 gigatonnes are considered to be economically recoverable. They are located largely in the Sydney Basin in New South Wales and the Bowen Basin in Queensland. There are other coal-bearing basins in New South Wales and Queensland, while small deposits are being worked in Western Australia, South Australia and Tasmania.

Black coal production in 1995–96 was 194 million tonnes, most of it from Queensland (93.8 million tonnes) and New South Wales (91.9 million tonnes). The coal industry was the single largest employer in the mining sector at the end of June 1996, employing 26,017 people.

More than 48% of New South Wales coal production is from underground mines, whereas over 88% of Queensland coal production is from open-cut mines.

Black coal produced in South Australia and Western Australia is used for electricity generation, while coal mined in Tasmania is used for industrial purposes such as steam generation.

Black coal was Australia's biggest export earning commodity at \$7,771m, accounting for 10% of the total value of merchandise exports in 1995–96. The biggest market for Australian coal in 1995–96 was Japan which bought 60.3 million tonnes for \$3,332m (43% of total sales). The Republic of Korea bought 17.6 million tonnes for \$981m (13%), and Taiwan 9.9 million tonnes for \$519m (7%).

Two-thirds of black coal production, consisting of steaming coal and hard and soft coking coal, is exported.

Australia's economic demonstrated resources of brown coal were estimated to be around 46 gigatonnes at December 1995. The main deposits are located in Victoria's Latrobe Valley (40 gigatonnes). Small deposits exist in other areas of south Gippsland, in south-eastern Victoria at Gelliondale and in the south-central region at Anglesea, Bacchus Marsh and Altona. Deposits are also known to exist at many places along the southern margin of the continent, and

as far north as central Queensland. Large deposits are being tested in the Kingston area of South Australia, the Esperance area of Western Australia and at Rosevale in the north-east of Tasmania. Brown coal is mined only in Victoria and is used mainly for electricity generation.

During 1995, significant operational changes for the three Latrobe Valley brown coal mines led to each owning and operating its own mine to supply its power station to generate electricity for Victorian consumers.

Because brown coal has a relatively low specific-energy value and high water content, its utilisation depends on large-scale, low-cost mining and negligible transportation costs in its raw state. In Victoria, the brown coal industry has reached a high degree of sophistication in mining, in on-site development of power generation, and in briquette and charcoal manufacture.

## Crude oil and condensate

Indigenous production of crude oil and condensate in 1995–96, at 30,763 megalitres (530,000 barrels per day), was slightly lower than production in 1994–95 of 31,301 megalitres. In 1995–96 the Bonaparte Basin produced 1,377 megalitres of crude oil, nearly 6% of the total indigenous oil production. Production of crude oil from the Gippsland Basin accounted for 47% of total indigenous crude oil production. The North West Shelf was the major producer of condensate during 1995–96, with 74% of indigenous production sourced in that region.

Export volumes of crude oil and condensate decreased by 5% to 10,899 megalitres in 1995–96 compared with 1994–95. The main markets were Japan, Taiwan, Indonesia and Singapore. Imports of crude oil and condensate increased by 15% to 23,703 megalitres.

## Liquefied petroleum gas (LPG)

LPG is a valuable co-product of oil and gas production and petroleum refining. The major constituents of LPG are propane and iso and normal-butane, which are gaseous at normal temperatures and pressures and are easily liquefied at moderate pressures or reduced temperatures. Operations involving LPG are expensive in relation to other liquid fuels because LPG has to be refrigerated or pressurised when transported and stored. LPG is an alternative transport fuel for high mileage vehicles in urban areas as well as a petrochemical feedstock and domestic fuel.

The June 1996 assessment by the Bureau of Resource Sciences suggested that approximately 115,352 megalitres (725million barrels) of LPG are undiscovered. A large part of the undiscovered LPG is thought to occur in the Exmouth Plateau and Rankin Platform of the Carnarvon Basin and in the Browse Basin.

Production of naturally occurring LPG in Australia in 1995–96 was 3,636 megalitres. The major contributors were the Bass Strait fields (2,247 megalitres or 62% of total production) and the Cooper Basin (897 megalitres or 25% of total production). About 40% of domestic LPG production is exported (1,469 megalitres in 1995–96), mainly to Japan.

The Australian Competition Consumer Commission maintains a monitoring role in the determination of the maximum wholesale price of LPG in each capital city.

## Natural gas

During 1995–96, 29,985 million cubic metres of natural gas (including liquefied natural gas) were produced for domestic consumption and

export, an increase of 3% from 1994–95 production. In 1995–96, 15,334 million cubic metres of natural gas from the export phase of the North West Shelf Project were liquefied for shipment. This export earned \$1,372m and was 51% of total Australian natural gas production.

## Oil and gas resources

The prospects of further discoveries of petroleum in Australia are considered to be modest. The sedimentary basins showing the most prospects are the Carnarvon, Bonaparte, Gippsland, Browse, offshore Perth, offshore Otway and Eromanga Basins. Consistent with the existing pattern of discoveries, undiscovered oil is likely to be of the light, low sulphur type, and more gas fields than oil fields are considered likely to be found.

Assessments by the Bureau of Resource Sciences indicate that there is an average probability of finding at least another 320 ggalitres (2,000 million barrels) of crude oil in Australia. This compares with demonstrated economically recoverable resources of 277 ggalitres (1,742 million barrels) and demonstrated sub-economically recoverable resources of 24 ggalitres (151 million barrels) as at December 1995 (table 17.5).

**17.5 OIL AND GAS RESOURCES(a)—December 1995**

Basin	Crude oil GL	Gas condensate GL	LPG GL	Natural gas Bcm
<b>ECONOMIC DEMONSTRATED RESOURCES(b)</b>				
Gippsland (Vic.)	114	18	33	173
Carnarvon (WA)	102	128	98	907
Cooper/Eromanga (SA/Qld)	9	6	11	77
Amadeus and Bonaparte (WA/NT)	48	29	1	84
Perth (WA)	2	0	0	4
Bowen/Surat/Adavale (Qld)	0	0	0	6
Canning (WA)	0	—	—	—
Bass (Tas.)	2	1	1	3
Otway (Vic.)	—	0	0	10
<b>Total</b>	<b>277</b>	<b>183</b>	<b>144</b>	<b>1 264</b>
<b>SUB-ECONOMIC DEMONSTRATED RESOURCES(c)</b>				
Gippsland (Vic.)	13	4	1	33
Bonaparte (WA/NT)	4	4	4	130
Carnarvon (WA)	6	2	0	254
Cooper/Eromanga (SA/Qld)	0	3	5	36
Browse (WA)	—	49	74	625
Perth (WA)	—	—	—	—
Amadeus (NT)	—	0	0	7
Bowen/Surat/Adavale (Qld)	—	—	—	1
Bass (Tas.)	1	5	7	7
Otway (Vic.)	—	0	0	4
<b>Total</b>	<b>24</b>	<b>67</b>	<b>92</b>	<b>1 099</b>

(a) Based on the McKelvey classification which subdivides resources in terms of the economic feasibility of extraction and their certainty of occurrence. (b) Economic demonstrated resources are resources judged to be economically extractable and for which the quantity and quality are computed from specific measurements and extrapolations on geological evidence. (c) Sub-economic demonstrated resources are similar to economic demonstrated resources in terms of certainty of occurrence, but are judged to be sub-economic at present.

Source: Department of Primary Industries and Energy.

**17.6 PRODUCTION(a) OF PRINCIPAL MANUFACTURED PRODUCTS OF MINERAL ORIGIN**

	Units	1991-92	1992-93	1993-94	1994-95	1995-96
<b>METALS(b)</b>						
Non-ferrous						
Alumina	'000 t	11 824	12 221	12 761	12 940	13 293
Refined aluminium	'000 t	1 234	1 306	1 384	1 285	1 331
Refined copper	'000 t	276	312	351	281	300
Lead bullion (for export)(c)	'000 t	202	234	208	177	181
Refined lead	'000 t	215	225	220	205	224
Refined zinc	'000 t	325	332	316	312	330
Refined tin	t	248	258	190	455	550
Ferrous						
Pig iron	'000 t	6 394	6 445	7 209	7 449	7 554
Precious						
Refined gold(d)	kg	281 835	288 188	307 336	296 626	317 950
Refined silver	t	382	355	379	349	350
<b>FUELS</b>						
Petroleum products						
Diesel automotive oil	ML	10 279	10 603	11 063	11 365	12 202
Industrial and marine fuel	ML	111	87	95	129	78
Fuel oil	ML	2 571	2 498	2 263	2 431	1 998
Petrol	ML	17 074	17 728	17 724	17 911	18 358
<b>BUILDING MATERIALS</b>						
Clay bricks	mill.	1 632	1 722	1 814	1 860	1 455
Portland cement	'000 t	5 731	6 225	6 733	7 124	6 397
<b>CHEMICALS</b>						
Sulphuric acid	'000 t	816	868	833	n.a.	n.a.
Superphosphate(e)	'000 t	1 337	1 440	1 344	1 590	1 697

(a) Some products exclude production of single establishment manufacturing businesses employing less than four persons and production of establishments predominantly engaged in non-manufacturing activities but which may carry on, in a minor way, some manufacturing. (b) Excludes secondary metal with the exception of basic iron. (c) Metallic content. (d) Newly won gold of Australian origin. (e) Double and triple superphosphate expressed in terms of single phosphate, that is 9% P equivalent.

Source: Australian Bureau of Agricultural and Resource Economics (non-ferrous, precious metals and petroleum products only).

## Minerals processing and treatment

As few minerals can be directly used in the form in which they are mined, most minerals undergo processing and treatment before use.

Table 17.6 shows the production of the main manufactured products of mineral origin during recent years.

## Mineral resources and geology

Australia has the world's largest economically recoverable resources of bauxite, tantalum, lead, mineral sands (ilmenite, rutile and zircon), silver, uranium and zinc. In addition, Australia's economic demonstrated resources are within the top six world-wide for black coal, brown coal, cobalt, copper, gold, iron ore, lithium,

manganese ore, nickel, rare earths, gem/near gem diamonds and industrial diamonds. Australia has almost all of the world's opal resources, and a significant share of the world's sapphire resources.

The diversity of Australian geology provides the basis for its wide range of economically important minerals and variety of deposit types. Its classified geological settings range from major Precambrian Shields composed of Archaean (older than 2.5 billion years) granite greenstone terrains, through to extensive Proterozoic (2.5 to 0.5 billion years) basins and metamorphic belts, to the younger Palaeozoic fold belts (0.5 to 0.25 billion years). Despite more than a hundred years of exploration, mineralisation is still being discovered in outcrops. However, most significant mineral deposits discovered in the past two decades were hidden beneath cover and this is likely to



be the pattern in the future, because prospective rocks in some 80% of the continent are concealed by veneers of deeply weathered rocks or sedimentary strata. The weathering occurred particularly during the Mesozoic and Cainozoic periods (0.25 billion years to the present).

The Archaean and Proterozoic basement rocks, underlying most of the western two thirds of Australia, have been the source of much of the country's mineral wealth to date. Large deposits such as the gold mines of the Kalgoorlie region and the iron ore deposits of the Pilbara region (Western Australia); the base metal deposits at Broken Hill (New South Wales), Mount Isa (Queensland), McArthur River (Northern Territory); the copper-uranium-gold deposit at Olympic Dam (South Australia); and the uranium deposits of the Alligator River area of the Northern Territory, all occur in the Precambrian rock. In eastern Australia, the major deposits are of Palaeozoic age and include the base metal deposits at Elura, Cobar, Woodlawn (New South Wales), Hellyer and Rosebery, the Mount Lyell copper-gold deposit, and the Renison tin deposit (Tasmania); and Kidston, Mount Leyshon (Queensland) and most other gold deposits. The large black coal deposits in New South Wales and Queensland are of upper Palaeozoic and Mesozoic age. Deposits formed in Tertiary times include the brown coal of Victoria; the oil shales of eastern Queensland; the bauxite of Weipa (Queensland), Gove (Northern Territory) and the Darling Ranges (Western Australia); the lateritic nickel deposits of Queensland and Western Australia; and the mineral sands deposits of the Murray Basin (Victoria).

The continuing discovery of world class deposits in both the established and new mineral provinces confirms Australia's high mineral potential. Major discoveries since 1990 include the Century (zinc), Cannington (lead, zinc, silver) and Ernest Henry (copper-gold) deposits in the major Carpentaria-Mount Isa base metal province, the Cadia (gold-copper) deposit in central western New South Wales, and the Bronzewing (gold) deposit in the Eastern Goldfields of Western Australia.

Australia's most important petroleum basins are under Bass Strait and off north-western Australia. Petroleum has been identified in Australian sediments as old as middle Proterozoic, but the main onshore petroleum accumulations are in sedimentary strata of middle Palaeozoic and younger ages and include the Bowen/Surat, Cooper/Eromanga, Otway and Perth Basins.

## Mineral exploration

Exploration consists of the search for new ore occurrences and undiscovered oil or gas, and/or appraisal intended to delineate or extend the limits of known deposits of minerals and oil or gas reservoirs by geological, geophysical, geochemical and other methods. This includes drilling, but excludes activities of a developmental or production nature. Exploration for water is excluded.

## Mineral exploration expenditure

Expenditure on private mineral exploration other than for petroleum in Australia during the last five years is summarised in table 17.7.

**17.7 PRIVATE MINERAL EXPLORATION EXPENDITURE (Other than for Petroleum), By State/Territory**

	1992-93	1993-94	1994-95	1995-96	1996-97
State	\$m	\$m	\$m	\$m	\$m
New South Wales	60.9	73.6	79.2	80.4	94.1
Victoria	12.2	20.7	31.2	42.6	51.8
Queensland	117.9	140.2	176.0	181.0	160.7
South Australia	21.3	24.7	20.9	24.1	35.1
Western Australia	348.1	453.7	495.5	519.5	691.7
Tasmania	7.8	10.2	14.9	18.8	26.0
Northern Territory	63.5	69.5	75.8	93.9	88.9
<b>Australia</b>	<b>631.8</b>	<b>792.6</b>	<b>893.3</b>	<b>960.3</b>	<b>1 148.6</b>

Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

## Drilling methods used in Australia

Exploration for minerals by private sector companies resulted in 13,361,000 metres being drilled and \$481m being spent in direct drilling costs in Australia in 1996–97. Direct drilling costs represent 42% of the total Australian mineral exploration expenditure of \$1,149m. Reverse circulation drilling accounted for the largest proportion of metres drilled (39%) and drilling expenditure (42%).

Tables 17.8 and 17.9 show metres drilled and expenditure by drilling methods for all areas (including production leases and other areas) by State/Territory.

## Petroleum exploration expenditure

In 1996–97, petroleum exploration expenditure for all States and Territories increased by 18% from \$725m in 1995–96 to \$853m. Expenditure on exploration in production leases increased by 75%, from \$79m in 1995–96 to \$138m, while exploration in all other areas increased by 11% from \$647m in 1995–96 to \$715m.

Onshore exploration expenditure contributed the largest increase to the total petroleum exploration expenditure, up \$77m (44%) to \$252m, while offshore exploration expenditure increased by \$51m (9%) to \$601m.

Table 17.10 shows expenditure on private petroleum exploration in Australia during the last five years.

**17.8 TOTAL METRES DRILLED, By State/Territory—1996–97**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	Aust.
Drilling method	'000 metres	'000 metres	'000 metres	'000 metres	'000 metres	'000 metres	'000 metres	'000 metres
Diamond	253.8	37.5	192.8	n.p.	919.0	113.9	n.p.	1 601.3
Reverse circulation	158.4	117.1	343.8	107.0	4 167.0	9.1	259.7	5 162.0
Percussion	76.5	13.8	n.p.	n.p.	709.3	—	n.p.	910.2
Rotary air blast	136.9	n.p.	450.6	248.9	3 601.6	n.p.	145.9	4 613.1
Other	157.3	n.p.	n.p.	52.2	582.6	—	231.4	1 074.1
<b>Total</b>	<b>782.9</b>	<b>193.0</b>	<b>1 097.7</b>	<b>434.9</b>	<b>9 979.5</b>	<b>130.8</b>	<b>741.9</b>	<b>13 360.6</b>

Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

**17.9 TOTAL DRILLING EXPENDITURE, By State/Territory—1996–97**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	Aust.
Drilling method	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Diamond	25.1	3.5	25.0	n.p.	93.3	12.4	n.p.	167.5
Reverse circulation	7.3	4.3	17.0	3.3	163.4	0.4	7.9	203.5
Percussion	2.9	0.5	n.p.	n.p.	9.9	—	n.p.	17.3
Rotary air blast	2.5	n.p.	19.3	2.6	46.7	n.p.	1.9	74.2
Other	5.2	n.p.	n.p.	1.0	9.3	—	1.5	18.6
<b>Total</b>	<b>43.0</b>	<b>8.8</b>	<b>65.6</b>	<b>9.3</b>	<b>322.5</b>	<b>13.5</b>	<b>18.4</b>	<b>481.1</b>

Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).

**17.10 PRIVATE PETROLEUM EXPLORATION EXPENDITURE**

	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m
Onshore	115.2	144.5	170.8	174.8	251.9
Offshore	496.7	362.2	511.7	550.3	601.0
<b>Total</b>	<b>611.9</b>	<b>506.7</b>	<b>682.5</b>	<b>725.1</b>	<b>853.0</b>

Source: Actual and Expected Private Mineral Exploration, Australia (8412.0).



## Overseas exploration

The amount spent on overseas exploration for minerals and petroleum by Australian resident companies increased from \$669m in 1995–96 to \$760m in 1996–97 (up 14%).

Expenditure on petroleum exploration of \$321m accounted for the highest proportion (42%) of the total overseas exploration expenditure.

Most of the expenditure (34%) occurred in North America where it increased by 87% from 1995–96 expenditure to \$254m. Expenditure also increased in Latin America, Africa, Indonesia, China and other Asian countries. The largest increases occurred in China (262%) and Africa (108%). Expenditure in Papua-New Guinea fell by 75% to \$11m.

Table 17.11 shows overseas exploration expenditure for 1996–97. These estimates exclude the expenditures of Australian companies which explore exclusively overseas.

## Administrative and financial arrangements

### Mineral rights

Mineral rights in Australia are held by the State and Territory Governments, and the granting of exploration and mining titles is administered by them under the respective State or Territory legislation. The Commonwealth Government holds rights to minerals on Australia's continental shelf beyond coastal waters of the States and the Northern Territory, and certain prescribed substances in the Northern Territory, within the meaning of the Atomic Energy Act (principally uranium). The Commonwealth Government is also able to influence overall development and production activity in the mineral industry by virtue of its constitutional powers with respect to international trade, customs and excise, taxation and foreign investment, through established consultative mechanisms such as the Australian and New Zealand Minerals and Energy Council (ANZMEC) and the Council of Australian Governments (COAG), and through initiatives for the enhancement of mineral provinces.

**17.11 OVERSEAS EXPLORATION EXPENDITURE OF AUSTRALIAN RESIDENT COMPANIES(a)—1996–97**

	North America(b)	Latin America(c)	Papua New Guinea	Indonesia	China	Other Asia	Africa	Other	Total
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Petroleum	n.p.	n.p.	5.4	33.2	n.p.	n.p.	n.p.	15.5	321.0
Copper, silver-lead-zinc, nickel and cobalt	n.p.	n.p.	n.p.	n.p.	n.p.	20.5	14.3	n.p.	174.4
Gold	47.0	44.2	n.p.	42.9	n.p.	30.8	32.9	21.1	227.2
Iron ore	..	..	..	..	..	..	..	..	..
Mineral sands	..	—	..	..	..	n.p.	n.p.	2.5	6.4
Tin, tungsten, scheelite and wolfram	..	..	..	..	..	..	..	..	..
Uranium	..	..	..	..	..	..	..	..	..
Coal	..	..	..	n.p.	n.p.	n.p.	..	..	n.p.
Construction materials	..	..	..	..	..	..	..	..	..
Bauxite	..	..	..	..	..	..	..	..	..
Diamonds	n.p.	n.p.	..	n.p.	n.p.	n.p.	7.1	n.p.	19.2
Other(d)	..	..	..	..	n.p.	n.p.	n.p.	n.p.	n.p.
<b>Total</b>	<b>254.1</b>	<b>120.3</b>	<b>10.7</b>	<b>109.0</b>	<b>8.7</b>	<b>65.6</b>	<b>118.2</b>	<b>72.9</b>	<b>759.6</b>

(a) Caution should be exercised when making comparisons with years prior to 1995–96 as the basis of collection is different. (b) Includes Canada. (c) Comprises Mexico, South America, Central America and the Caribbean. (d) Preliminary exploration where the commodity is not yet known.

Source: *Actual and Expected Private Mineral Exploration, Australia* (8412.0).

## Mining and exploration for other than petroleum—legislation

### Onshore

Each State and Territory has its own Mining Act and Regulations governing the prospecting for and working of mineral deposits. These Acts and Regulations, although similar in principle, are different in detail.

Rights to explore for minerals are awarded by granting prospecting licences and (for larger areas) exploration licences or exploration permits. Each tenement is granted subject to conditions such as minimum exploration expenditure each year, methods of prospecting and the requirement for progressive relinquishment of area held. The tenure is usually limited. Most States and Territories make provision for a Miner's Right which permits an individual to prospect or fossick for minerals on Crown Land.

Following the 3 June 1992 decision by the High Court of Australia which held that the common law of Australia recognised a form of native land title, the Commonwealth enacted the *Native Title Act 1993*. The Act recognises and protects native title rights and establishes procedures to determine those rights and to ensure that those rights, where they continue to exist, are taken into account in future land management administration.

Existing rights held by non-Indigenous people are also protected by the Act. While the Act does not provide a veto over activities on Aboriginal land, it does enable Aboriginal people to negotiate in relation to proposed activities.

On 23 December 1996, the High Court released its decision in the Wik Case. The decision found that the grant of certain pastoral leases did not give the lessee exclusive possession of the leased areas and did not necessarily extinguish any native title that may be held in respect of those areas.

In May 1997, the Commonwealth Government released a ten point plan as a policy framework for its legislative response to the Wik decision. It later released draft amendments to the Native Title Act for consultation and introduced revised amendments into the Federal Parliament in September 1997. The Native Title Amendment Bill was passed in July 1998, and most of its provisions came into operation on 30 September 1998.

### Offshore

Following the enactment of the *Seas and Submerged Lands Act 1973*, the High Court confirmed that the Commonwealth has sovereignty over the territorial sea and sovereign rights over the resources of the whole of Australia's continental shelf. However, in the Offshore Constitutional Settlement between the Commonwealth and the States reached in June 1979, it was agreed that responsibility for mining of the seabed of coastal waters (i.e. the area landward of three nautical miles from the baseline of the territorial sea) should lie with the States and the Northern Territory and should be governed by their legislation, while the Commonwealth should have responsibility for areas beyond. The *Offshore Minerals Act 1994*, which replaced the *Minerals (Submerged Lands) Act 1981*, provides for the granting and administration of exploration and mining licences in those areas of sea covered by Commonwealth legislation.

## Petroleum mining and exploration—legislation

### Onshore

In Australia, full control of petroleum mining rights is vested with the relevant State or Territory Government. Any organisation or individual proposing to undertake petroleum exploration or development must first satisfy the relevant government that it has access to the necessary financial and technical resources to undertake the proposed operations.

### Offshore

The situation is the same as detailed above for mining exploration, with the Commonwealth having sovereignty, but administrative responsibility shared between the Commonwealth and the States; in the case of petroleum, under the *Petroleum (Submerged Lands) Act 1967*.

The offshore mining and exploration legislation provides for:

- exploration permits, providing exclusive exploration rights over a specific area; and
- production licences to authorise development and commercial production from discovered fields; and retention leases to allow security of tenure over discoveries not currently regarded as economic to develop.

**17.12 MINERAL ROYALTY RECEIPTS BY GOVERNMENTS(a)**

	1991–92	1992–93	1993–94	1994–95	1995–96
	\$'000	\$'000	\$'000	\$'000	\$'000
New South Wales	221 831	233 524	250 877	263 297	268 164
Victoria(a)	62 600	57 527	48 564	49 586	47 430
Queensland	263 843	303 497	301 876	301 798	339 531
South Australia	71 767	71 344	61 114	52 509	57 273
Western Australia	337 364	342 523	317 700	337 932	383 605
Tasmania	37 540	37 022	40 754	47 288	51 639
Northern Territory	28 265	14 942	28 673	25 848	22 909
Commonwealth Government	105 233	80 766	103 434	136 432	227 109
<b>Total</b>	<b>1 128 443</b>	<b>1 141 145</b>	<b>1 152 983</b>	<b>1 214 690</b>	<b>1 397 660</b>

(a) Includes royalties on sand and gravel from Crown lands.

Source: Federal, State and Territory departments responsible for mining.

Offshore projects, except in the area around the North West Shelf Gas Project, are subject to Petroleum Resource Rent Taxation (PRRT), as described below under *Secondary tax arrangements in the petroleum industry*.

The Timor Gap Zone of Co-operation Treaty designates an area of the Continental Shelf between Australia and Indonesia subject to control by a Joint Administration. Revenue collected from petroleum production taxation is shared between the two nations. The Treaty has provisions to prevent double taxation.

### Mineral royalties

Mineral resources are owned by the Crown in Australia, either by the State and Territory Governments within their borders (and up to three nautical miles offshore), or by the Commonwealth Government in offshore areas outside the three nautical mile limit. Accordingly, royalties are collected by State and Territory Governments for mining onshore and up to three nautical miles offshore, and by the Commonwealth outside that limit.

State royalties regulations vary in regard to types of royalties, rates levied and those commodities subject to royalties.

In recent years, some State Governments have negotiated special royalty arrangements with companies which are seeking mineral leases for

large-scale developments. These royalty rates may vary, depending on whether production is for export or for domestic processing. Examples of this type of royalty agreement are the Argyle Project in Western Australia and the Olympic Dam mine in South Australia. Mineral royalties received by governments in recent years are shown in table 17.12.

### Crude oil marketing and pricing arrangements

Refiners and producers are free to negotiate the quantities and prices of crude oil they buy and sell. Crude oil producers can export crude oil as an alternative to selling on the domestic market.

Decisions on major refinery investment associated with changes in domestic crude availability have led to a significant program of investment in upgraded plant and equipment.

The price of crude oil used for the purposes of excise tax assessment is the monthly volume-weighted average of realised prices of sales of oil from the area subject to excise.

### Pricing and export approval system for liquefied natural gas (LNG)

The Commonwealth Government removed all controls on LNG exports in March 1997. Exports of Australian liquefied natural gas are now subject to international market forces.

## Secondary tax arrangements in the petroleum industry

In addition to general taxation arrangements applying to companies in Australia, petroleum production projects are subject to secondary taxes. The type and rate of secondary taxation (resource rent tax, resource rent royalty, or excise and royalties) depends on the location of the petroleum resource, the date of discovery of the petroleum reservoir and the date upon which production commenced.

A profit based Petroleum Resource Rent Tax (PRRT) applies to petroleum projects in the majority of Australia's offshore areas beyond the State's territorial seas. The PRRT is levied at a rate of 40% of net revenues from successful projects which have recovered outlays, plus a threshold rate of return. The North West Shelf production licence areas and associated exploration permits are excluded. Where PRRT applies, it replaces excise and royalties which would otherwise have been levied.

A Resource Rent Royalty (RRR) may be applied to onshore petroleum projects by State Governments. Where RRR is applied the legislation provides for the Commonwealth to waive its crude oil excise whenever the relevant State Government negotiates an acceptable RRR agreement with the project producers and agrees to a satisfactory revenue sharing formula with the Commonwealth.

Excise applies to crude oil production from the North West Shelf projects offshore and from all onshore areas (except Barrow Island where a RRR applies).

Crude oil excise is based on the annual level of crude oil sales from individual production areas and is levied as a percentage of the realised price received by producers.

Different excise scales are applicable to oil production depending upon the date of discovery of the production area and the date when the area was first developed. The first 30 million barrels of crude oil production from a field are exempt from excise. Production beyond this level is subject to the appropriate excise rate.

Oil discovered before 18 September 1975 (old oil) attracts a higher rate of excise than oil discovered on or after this date (new oil). An intermediate scale also applies to oil produced from old oil fields that were not developed as at 23 October 1984. However, in the case of all

onshore fields that commenced production after 1 July 1987, production in excess of 30 million barrels is subject to new oil excise.

A Commonwealth Royalty is also levied on offshore petroleum production from the North West Shelf project area. Proceeds are shared by the Commonwealth with Western Australia. Onshore petroleum rights are vested in the State and Northern Territory Governments, and the Commonwealth does not, in general, receive a share of this royalty.

## Incentives to encourage petroleum exploration and development

Australia's full petroleum potential is yet to be determined. Government measures to encourage investment in the petroleum industry include:

- the offshore exploration strategy, which includes a program of regularly releasing exploration areas on which companies can bid;
- the Petroleum Resource Rent Tax (PRRT) reforms (see *Secondary tax arrangements in the petroleum industry*, above);
- development of a national gas strategy, which aims to free up domestic gas markets;
- deregulation of the crude oil and LPG markets, which removed controls on prices and restrictions on sale of these commodities within and outside Australia; and
- accelerated depreciation and investment allowance arrangements under company tax.

In the 1995 Budget, the Commonwealth Government set the rate of company tax in Australia at 36%. This rate of taxation is significantly lower than the peak rate of 49% which applied during the 1987 and 1988 financial years.

## Administrative arrangements

The Commonwealth Minister for Industry, Science and Resources has portfolio responsibility for national energy policy matters, including the commercial development of hydrocarbon fuels and minerals. The Department of Industry, Science and Resources provides support for a number of advisory bodies including the Energy Research and Development Corporation, the Australian and New Zealand Minerals and Energy Council, the National Oil Supplies Advisory Committee, the National Petroleum Advisory Committee and the National Fuels Emergency Consultative Committee.

The Department is also responsible for the implementation of action required from Australia's membership of the International Energy Agency and for the national system of accounting for control of nuclear materials under Australia's Agreement with the International Atomic Energy Agency.

## Research

Research into exploration, mining, ore dressing and metallurgy is conducted by government bodies, universities, private enterprise, and by the combined efforts of all these. A summary of the main organisations and their functions follows.

### Australian Geological Survey Organisation (AGSO)

The AGSO, formerly called the Bureau of Mineral Resources, Geology and Geophysics, is Australia's national geoscientific agency. In November 1998, it became part of the Department of Industry, Science and Resources, absorbing the Mineral Resources and Energy Branch and the Petroleum Resources Branch of the former Bureau of Resource Sciences. These branches now form part of AGSO's programs.

AGSO's primary mission is to build a national geoscientific mapping effort to encourage the sustainable management of Australia's minerals, energy, land, ground water and ocean resources.

AGSO's role is to improve the quality, extent and accessibility of publicly available geoscience knowledge to enhance:

- the development of a more productive, competitive and diversified Australian mineral and petroleum exploration industry;
- the management of Australia's land, ground water and ocean resources consistent with sustainable development principles; and
- the development of effective strategies to mitigate the effects of natural geological hazards.

AGSO provides expert professional geoscientific advice on minerals, petroleum, land, ground water, coastal and marine issues and seismological and geological hazard analysis to support the development of management principles and land use strategies. AGSO also contributes to Commonwealth Government involvement in international geoscientific

activities and development assistance programs, and actively pursues commercial geoscientific projects in collaboration with Australian industry and other organisations as appropriate.

AGSO's activities include regional mapping and analysis of major mineral provinces and petroleum basins; regional environmental mapping (including land resources such as soils and ground water); airborne magnetic and radiometric surveying; onshore and offshore seismic surveying; the operation of geophysical observatories; and the development of an accessible national geoscience information system.

The Mineral Resources and Energy Program provides expert scientific analyses and technical advice on mineral and energy resources and mining, mineral resource potential, exploration, multiple land use and the sustainable development of mineral resources, energy efficiency and greenhouse gas emissions.

The Program also maintains two large national databases which are accessed by Commonwealth and State government departments, the mining industry and the wider community. The mineral occurrence location database (MINLOC) contains information on more than 50,000 Australian mineral occurrences, and MINRES, a mineral resources database, contains comprehensive information on the mineral resources of some 1,500 Australian mineral deposits.

### Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Research and development activities of the CSIRO are designed to play a major contributing role in the development of sustainable and competitive minerals and energy industries in Australia.

This is achieved by the provision of research, development and service capabilities to support existing and emerging industries, as well as providing for the next generation of technology, products and processes. At the same time the CSIRO endeavours to bring about safe and ecologically sustainable development through research and advice on environmental issues related to client industries. By working closely with industry, government and other organisations, the CSIRO helps transform research outcomes into new or improved business opportunities.

Minerals research by the CSIRO is undertaken as part of the work program of Divisions operating within the sectors of the Minerals and Energy Alliance.

See *Chapter 25, Science and Technology* for more information on the CSIRO.

### **Australian Mineral Industries Research Association Limited**

The Association provides high quality development and management of jointly funded research projects for the benefit of the Association's members. Membership includes all the largest Australian mineral and coal companies, smaller exploration companies, and suppliers of services to the industry. It sustains an active involvement in four Co-operative Research Centres and was appointed in 1992 to manage the Australian Coal Association Research Program.

### **Australian Bureau of Agriculture and Resource Economics (ABARE)**

Established originally as the Bureau of Agricultural Economics, ABARE is the largest applied economic research agency in Australia which is undertaking research into commodities. ABARE was formed by the combination of the former Bureaus of Agricultural Economics and Resource Economics in 1987.

ABARE undertakes specific research projects on behalf of a wide range of clients and deals directly with a variety of industry groups,

Australian and international agencies and research organisations, and Commonwealth and State government departments.

ABARE services include:

- deriving supply and demand projections;
- assessing the outlook for commodity prices;
- examining patterns of national and world production and consumption;
- analysing the impact of economic policies;
- developing analytical computer programs and economic policies;
- undertaking regional and environmental economic assessments; and
- providing economic assessments of factors affecting the competitiveness of the economic sector.

The organisation is based on three research groups:

- Agriculture;
- Minerals, Energy and Resources; and
- Environment and Trade.

ABARE undertakes economic research on issues affecting the full range of major minerals, energy, agricultural and natural resources industries, as well as on climate change, and on macroeconomic, microeconomic and trade issues relating to these industries.

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### Other publications

Other organisations which produce statistics in this field include ABARE, the Department of Industry, Science and Resources, the Joint Coal Board and the Australian Institute of Petroleum. State government departments and instrumentalities are important sources of energy data, particularly at the regional level, while a number of private corporations and other entities operating within the mining and energy fields publish or make available a significant amount of information.





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## Introduction

Energy is a major contributor to Australia's economy. The energy sector encompasses all activities relating to the production, transformation, distribution and use of energy. It is an important input to other industries including transport, manufacturing and the household sector. In 1997–98, energy products accounted for about 18% of Australia's exports. In recent years, there has been a growing emphasis on increasing the efficiency of the energy sector and delivering the benefits to consumers, industry and the Australian economy.

For energy production, Australia relies mainly on the production and consumption of fossil fuels, particularly coal, crude oil and natural gas. Renewable energy products are increasing in their significance as they become cost competitive, and they are increasingly valued for their reduced impacts on the environment. With

the exception of hydro power, renewable energy products contribute only 2% of total energy production. More than 80% of electricity is generated from fossil fuels, with most of the remainder produced from hydro power stations.

Table 18.1 shows energy production for selected countries in 1995–96. Australian production has grown strongly over recent decades, reflecting increased domestic and international demand. Australia, Canada and Japan have increased production by more than 40% since 1986. In contrast the United Kingdom and United States have increased production by less than 10% over this period. Table 18.2 indicates that Australia and Japan have also increased consumption at close to double the rate of the other countries listed. Australian production relies mainly on coal, which contributes 68.7% of the total. As a proportion of the total, the transport industry in Australia and the United States consumes a significantly greater share of energy than in the other countries listed.

### 18.1 ENERGY PRODUCTION FOR SELECTED COUNTRIES—1995–96

	Unit	Australia	Canada	Japan	Netherlands	United Kingdom	United States
Primary production	mtoe(a)	<b>189.0</b>	357.3	102.5	73.4	269.1	1 687.3
Increase since 1986	%	<b>40.2</b>	49.1	47.3	17.7	8.8	8.4
Nuclear	%	<b>0.0</b>	6.8	76.9	1.5	9.2	11.0
Coal	%	<b>68.7</b>	11.6	3.5	0.0	11.6	32.4
Oil	%	<b>14.6</b>	32.7	0.8	4.4	50.5	23.6
Natural gas	%	<b>13.4</b>	37.8	2.0	93.1	28.2	26.1
Other(b)	%	<b>3.3</b>	11.1	17.0	1.1	0.6	6.8

(a) Million tonnes of oil equivalent. (b) Includes hydro, geothermal, solar, wind, combustible renewables and waste.

Source: International Energy Agency; Organisation for Economic Co-operation and Development, 1998.

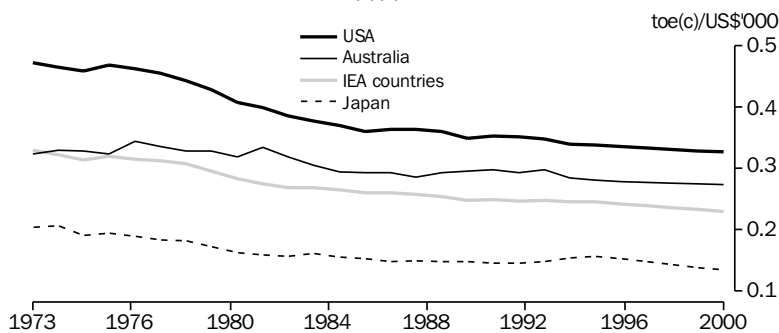
### 18.2 ENERGY CONSUMPTION FOR SELECTED COUNTRIES—1995–96

	Unit	Australia	Canada	Japan	Netherlands	United Kingdom	United States
Final energy consumption	mtoe(a)	<b>66.1</b>	181.9	337.1	59.1	162.4	1 443.5
Increase since 1986	%	<b>31.1</b>	19.9	34.6	16.8	14.8	12.6
Industry	%	<b>39.3</b>	37.6	42.5	34.7	28.3	29.4
Transport	%	<b>39.4</b>	27.9	26.8	22.7	30.9	39.0
Other	%	<b>21.3</b>	34.5	30.7	42.6	40.8	31.6

(a) Million tonnes of oil equivalent.

Source: International Energy Agency; Organisation for Economic Co-operation and Development, 1998.

**18.3 ENERGY INTENSITY FOR SELECTED COUNTRIES,  
TPES/GDP(a)(b)—1973–2000**



(a) Total primary energy supply. (b) 1990 prices and exchange rates. (c) Tonnes of oil equivalent.

Source: International Energy Agency; OECD.

Energy intensity is an indicator of efficiency in energy production; it is calculated by dividing the total primary energy supply by gross domestic product. Measures of energy intensity also take account of the mix of energy uses in an economy. As an example, Japan's low level of energy intensity can be partly explained by the relatively low number of motor vehicles per capita compared to the USA and Australia. Gains in energy efficiency are reflected in a lower measure of energy intensity if the level of economic activity and sectoral composition remain the same or if production increases relative to the amount of energy being used. Graph 18.3 shows the trend of energy intensity since 1973 for Australia, Japan, the USA and International Energy Agency (IEA) countries. Over most of this period, Australia has had a higher than average measure of energy intensity.

## Energy resources

Australia has a wealth of energy resources, sufficient to meet both its short and long term domestic needs and to maintain its position as a major exporter of commodities such as black coal and uranium. Black coal resources in Australia account for about 8% of the world's total reserves and uranium resources are

regarded as among the largest low-cost sources. Reserves of crude oil and condensates are limited, but natural gas resources are sufficient to supply domestic and export markets.

Australia has a favourable climate for solar applications and also great potential for developing other renewable energy sources. Some electricity retailers already offer consumers the opportunity to elect that their supply be from renewable sources. Green power is electricity supplied from sources such as wind, solar, small hydro and biomass. Currently New South Wales has the world's largest green power program, with 2.7 million customers in a position to choose an environmentally friendly electricity supply.

In the world's energy market, Australia plays an important role as:

- the world's largest exporter of black coal;
- a major uranium producer and exporter; and
- a major producer and exporter of liquefied natural gas (LNG).

Australia is currently one of only a few countries in the OECD which are net energy exporters (others include Canada, Norway and the United Kingdom).

Table 18.4 presents estimates of Australia's identified energy resources and production levels. While the estimated life span of energy resources varies, most are expected to remain in production for over 100 years. Based on demonstrated economic resources, black coal and uranium have an estimated life span of over 200 and 100 years respectively. Sufficient brown coal exists to maintain current production levels for over 800 years. Crude oil and condensate reserves are the most limited and could be

exhausted within two decades. Overall Australia is well placed for future development of fossil fuel resources.

Traditionally Australia has relied on fossil fuel resources, but the harnessing of renewable energy sources is an increasingly important component of Australia's energy supply. Recent Government initiatives at both the State and Commonwealth levels are encouraging major suppliers to increase the proportion of energy sourced from renewable sources.

#### 18.4 AUSTRALIA'S IDENTIFIED ENERGY RESOURCES—1997

	Unit	Demonstrated resources		Inferred resources	Production 1997
		Economic	Sub-economic		
Black coal	Gt	51	4	very large	0.27
Brown coal	Gt	41	3	166	0.06
Crude oil(a)(b)	Gt	240	30	n.a.	25.10
Natural gas(a)	Tt	1 360	984	n.a.	30.00
LPG(a)(c)	Gt	174	77	n.a.	4.10
Shale oil	Gt	—	3 619	41 552	—
Uranium	kt	615	93	181	6.50

(a) As at end December 1996. (b) Includes condensates. (c) Naturally occurring.

Source: Bureau of Resource Sciences; Australian Bureau of Agricultural and Resource Economics, 1997.

Map 18.5 shows operating and proposed solar and wind power generating sites. Solar power is generated through photovoltaic cells directly converting sunlight to electricity. Australia has the highest per capita use of photovoltaics in the world. According to the Department of Industry, Science and Resources, total installed capacity is around 13 megawatts and is growing by about two megawatts per annum. Wind energy is generated when the wind force acts on specially shaped blades or rotors. The motion of the

blades is used to drive a generator which produces electricity. A lack of high wind speeds and the high cost of wind generation compared to coal fired power have limited the use of wind power in Australia. The largest wind farm currently operating in Australia is located at Crookwell, NSW. The wind farm began operating in August 1998 and has a capacity of 4.8 megawatts. Another large farm, located at Esperance on the coast of Western Australia, has a capacity of 2.4 megawatts.

**18.5 SOLAR AND WIND POWER GENERATION SITES, Australia—1998**



Source: Bureau of Resource Sciences, 1998.

Map 18.6 shows the location of operating and proposed landfill and hydro power generating sites. Landfill gas is generated from burning methane produced by the anaerobic decomposition of organic matter at old tip sites. Present installed capacity for landfill gas in Australia is about 72 megawatts. According to projections by the Department of Industry, Science and Resources, installed capacity is

expected to increase to 100 megawatts by the year 2000. Hydro power provides around 15% of Australia's electricity generation, with total installed capacity of almost 7,580 megawatts. The two most important producers of hydro electricity are the Snowy Mountains Hydro-Electric Authority and the Hydro-Electric Corporation of Tasmania.

### 18.6 HYDRO AND LANDFILL GAS POWER GENERATION SITES, Australia—1998



Source: Bureau of Resource Sciences, 1998.

Table 18.7 presents Australia's energy production in terms of non-renewable and renewable sources. Black coal accounted for 48% of total energy production in 1996–97, a slightly smaller proportion than in 1995–96. Uranium was the second largest contributor to Australian production with 24% of the total in 1996–97. Production of uranium continues to increase as a result of the growth in international demand and the expansion of uranium production in both the Ranger and Olympic Dam mines. Further expansion is expected as a result of the Commonwealth Government's approval for a mine development project at Jabiluka, the site of the world's largest uranium reserves. In 1996–97, natural gas and crude oil each contributed about 10% of total energy production. Natural gas production is expected to increase over the short term, mainly to supply the domestic market. It is also predicted there will be continued steady growth in the production of renewable energy resulting from government initiatives and increasing economic competitiveness of new technologies.

**18.7 ENERGY PRODUCTION,  
By Fuel Type**

	1995–96		1996–97	
	Petajoules	%	Petajoules	%
Black coal	5 279.0	48.6	5 580.0	47.6
Brown coal	522.0	4.8	559.1	4.8
Uranium	2 399.4	22.0	2 817.7	24.1
Crude oil	1 120.3	10.3	1 148.8	9.8
Natural gas	1 200.8	11.0	1 219.1	10.4
LPG	96.7	0.9	100.4	0.9
Renewables	258.3	2.4	284.9	2.4
<b>Total</b>	<b>10 877.1</b>	<b>100.0</b>	<b>11 710.0</b>	<b>100.0</b>

Source: Australian Bureau of Agricultural and Resource Economics, 1998.

In 1997–98, energy products accounted for about 18% of the total value of Australia's exports. Table 18.8 shows that the value of energy exports has increased by 23% from 1995–96 to 1997–98. Black coal has the greatest export value at about 11% of total exports. Crude oil, petroleum products and natural gas each account for about 2%. The ores and concentrates of uranium and thorium contribute about 0.3% of the total.

## Energy end use in Australia

Table 18.9 shows trends in Australia's energy supply, conversion and consumption for the period 1989–90 to 1996–97. Despite vast resources, Australia's energy production and conversion are not high on the international scale, being approximately 3% and 1% respectively of the world's non-renewable primary fuel production. However energy consumption relative to GDP is high in Australia and there is a large potential for improvement in energy efficiency.

In 1996–97, energy production in Australia was 11,710 petajoules, with net exports accounting for 6,851 petajoules. After taking account of the change in stocks and statistical discrepancies, the total domestic energy supply was 4,610 petajoules. The energy conversion industry consumed 32% of the total domestic supply. Energy end use in 1996–97 was about 3,155 petajoules.

Table 18.9 also shows the steady upward trend of energy supply, conversion and end use. During the period 1989–90 to 1996–97, energy production increased by about 31%, energy used in the conversion industry increased by about 14%, and energy consumption increased by about 18%.

**18.8 EXPORTS OF ENERGY PRODUCTS**

	1995–96		1996–97		1997–98	
	Total exports		Total exports		Total exports	
	\$m	%	\$m	%	\$m	%
Coal, whether or not pulverised but not agglomerated	7 775	10.2	7 958	10.1	9 562	10.9
Petroleum oils and oils obtained from bituminous minerals, crude	1 593	2.1	1 883	2.4	1 972	2.2
Petroleum products	1 596	2.1	1 922	2.4	2 008	2.3
Gas, natural and manufactured	1 562	2.1	1 895	2.4	1 968	2.2
Ores and concentrates of uranium or thorium	242	0.3	245	0.3	288	0.3
<b>Total</b>	<b>12 768</b>	<b>16.8</b>	<b>13 903</b>	<b>17.6</b>	<b>15 798</b>	<b>17.9</b>

Source: International Merchandise Trade, Australia (5422.0).



**18.9 FLOW TABLE FOR ENERGY SUPPLY, CONVERSION AND END USE**

	1989–90	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	petajoules	petajoules	petajoules	petajoules	petajoules	petajoules	petajoules	petajoules
<b>SUPPLY</b>								
Production	8 923.2	9 298.6	9 613.5	8 981.4	9 037.8	9 590.8	10 842.8	11 710.0
Imports	625.6	625.2	676.9	860.3	898.2	925.3	1 043.7	1 109.1
Exports	-5 257.4	-6 786.1	-6 500.7	-5 583.7	-6 403.5	-6 771.1	-7 459.7	-7 960.2
Stock change(a)	-345.3	812.2	193.0	-176.0	649.4	621.1	78.8	-248.2
<i>Total supply</i>	<i>3 946.0</i>	<i>3 950.0</i>	<i>3 982.9</i>	<i>4 081.9</i>	<i>4 181.9</i>	<i>4 365.3</i>	<i>4 505.4</i>	<i>4 610.3</i>
<b>CONVERSION</b>								
Coke ovens	29.8	36.0	33.3	31.9	24.1	24.5	18.3	31.9
Briquetting	0.3	0.3	2.2	0.0	0.5	0.3	1.7	1.7
Petroleum refining	13.9	13.3	13.6	13.2	13.4	13.2	14.6	15.7
Gas manufacturing	0.3	0.2	0.5	0.4	0.3	0.4	0.4	0.5
Electricity generation	990.4	992.4	1 016.3	1 020.5	1 033.5	1 082.4	1 129.7	1 160.6
Other conversion	61.7	60.4	44.6	41.3	47.8	49.4	51.4	50.9
Own fuel use	181.0	180.5	183.4	189.1	193.1	199.9	198.5	193.3
<i>Total conversion</i>	<i>1 277.4</i>	<i>1 283.1</i>	<i>1 293.9</i>	<i>1 296.4</i>	<i>1 312.7</i>	<i>1 370.1</i>	<i>1 414.6</i>	<i>1 454.6</i>
<b>Net supply(b)</b>	<b>2 668.4</b>	<b>2 666.6</b>	<b>2 689.1</b>	<b>2 785.4</b>	<b>2 869.3</b>	<b>2 996.0</b>	<b>3 091.0</b>	<b>3 155.3</b>
<b>END USE</b>								
Agriculture	57.1	57.8	59.1	61.1	62.8	64.8	64.6	67.0
Mining	162.2	167.0	176.5	191.8	196.6	215.8	238.6	248.8
Iron and steel	99.7	96.2	95.9	96.2	103.2	103.1	99.5	98.6
Chemical	134.1	137.2	128.8	132.5	137.2	141.7	149.2	144.3
Other industry(c)	640.4	638.2	626.7	654.0	682.3	697.7	703.2	720.6
Construction	41.0	37.2	39.2	41.6	43.0	44.3	43.8	45.5
Road transport	811.3	796.7	809.8	829.2	853.5	879.5	904.3	921.3
Rail transport	30.7	30.5	29.9	29.3	29.0	28.4	28.7	29.0
Air transport	109.3	122.7	131.3	140.0	145.3	163.0	176.3	183.0
Water transport	56.3	49.0	48.7	45.6	46.8	62.6	64.6	61.6
Commercial	151.0	156.8	160.0	164.4	168.4	179.9	189.7	195.8
Residential	322.5	327.8	334.7	347.6	345.1	359.5	369.4	377.5
Others(d)	52.7	49.3	48.3	52.1	56.0	58.0	59.1	62.4
<b>Consumption</b>	<b>2 668.4</b>	<b>2 666.6</b>	<b>2 689.1</b>	<b>2 785.4</b>	<b>2 869.3</b>	<b>2 996.0</b>	<b>3 091.0</b>	<b>3 155.3</b>

(a) Includes discrepancies. (b) After conversion, industrial sector use and losses. Equals total final energy consumption.

(c) Manufacturing industries other than iron and steel and chemical. (d) Includes lubricants, greases, bitumen and solvents.

Source: Australian Bureau of Agricultural and Resource Economics, 1998.

Energy consumption trends vary across industries. In 1996–97, the transport industry (including road, rail, air and water transport) consumed 26% of the total energy supply. Of this, road transport consumed 77%. Electricity generation also consumed more than 25% of supply. Energy consumption in the mining industry increased by 47% between 1989–90 and 1996–97. In contrast, energy consumption in the residential and agricultural sectors has remained relatively steady.

Tables 18.10 to 18.13 provide information about customers and consumption in the electricity and gas industries. The number of electricity

customers increased from 8.1 million in 1995–96 to 8.2 million in 1996–97. New South Wales and Victoria accounted for 59% of the total electricity customers while Victoria had 46% of natural gas customers. In terms of energy consumption, New South Wales consumed 36% of total electricity, Victoria 23%, Queensland 19%, Western Australia 7% and the remaining States and Territories totalled about 15%. Excluding Western Australia, Victoria accounted for 52%, New South Wales 30% and South Australia 12% of total gas consumption. Information on gas consumption in Western Australia for 1996–97 was not available for publication.

**18.10 ELECTRICITY, Number of Customers by State/Territory—30 June 1997**

	NSW	Vic.	Qld	SA	WA	Tas.	ACT	NT	Aust.
Residential	2 437 181	1 784 717	1 295 116	624 262	647 383	202 556	116 129	52 883	7 160 227
Commercial	307 349	202 553	200 654	55 524	93 282	34 393	11 876	10 612	1 026 756
Industrial	(a)	71 215	(a)	31 609	1 333	6 356	(a)	(a)	(a)
Traction	(a)	210	(a)	1	—	—	—	—	211
Public lighting	2 815	3 892	130	1 937	152	217	(a)	38	9 181
<b>Total</b>	<b>2 747 345</b>	<b>2 062 587</b>	<b>1 495 900</b>	<b>713 333</b>	<b>742 150</b>	<b>243 522</b>	<b>128 005</b>	<b>63 533</b>	<b>8 196 375</b>

(a) Included in 'Commercial' category.

Source: Electricity Supply Association of Australia, 1998.

**18.11 ELECTRICITY CONSUMPTION, By State/Territory—1996-97(a)**

	NSW	Vic.	Qld	SA	WA	Tas.	ACT	NT	Aust.(b)
	million kWh	million kWh	million kWh	million kWh	million kWh	million kWh	million kWh	million kWh	million kWh
Residential	17 134	9 782	8 188	3 570	3 041	1 849	n.a.	375	44 988
Commercial	36 284	9 107	20 392	2 363	7 678	777	n.a.	1 000	103 367
Industrial	(c)	14 473	(c)	3 465	(c)	6 262	n.a.	(c)	(c)
Traction	(c)	304	(c)	2	—	—	n.a.	—	(c)
Public lighting	252	250	151	89	81	21	n.a.	15	899
<b>Total</b>	<b>53 669</b>	<b>33 915</b>	<b>28 731</b>	<b>9 489</b>	<b>10 799</b>	<b>8 909</b>	<b>2 311</b>	<b>1 390</b>	<b>149 254</b>

(a) Figures do not include internal usage by supply authorities or consumption on unread meters at 30 June. (b) No breakdown of consumption is available from the Australian Capital Territory. The totals for Australia by consumption category are estimated by ESAA. (c) See the figure for 'Commercial'. One figure is given to include both 'Commercial' and 'Industrial'.

Source: Electricity Supply Association of Australia, 1998.

**18.12 NATURAL GAS OPERATIONS OF UTILITIES, Number of Customers by State/Territory—1996-97**

	NSW(a)	Vic.(a)	Qld	SA	WA	Tas.(b)	NT	ACT	Aust.
Residential	687 042	1 349 307	126 859	312 000	372 986	—	211	58 654	2 907 059
Commercial	22 158	38 890	4 393	6 861	6 766	—	69	1 484	80 621
Industrial	2 449	4 267	544	1 238	269	—	6	39	8 812
<b>Total</b>	<b>711 649</b>	<b>1 392 464</b>	<b>131 796</b>	<b>320 099</b>	<b>380 021</b>	<b>—</b>	<b>286</b>	<b>60 177</b>	<b>2 996 492</b>

(a) Sales in Albury, New South Wales were included in Victoria. (b) Natural gas not available in Tasmania.

Source: The Australian Gas Association, 1998.

**18.13 NATURAL GAS OPERATIONS OF UTILITIES, Consumption by State/Territory—1996-97**

	NSW(a)	Vic.(b)	Qld	SA	WA	Tas.(c)	NT	ACT	Aust.(d)
	terajoules	terajoules	terajoules	terajoules	terajoules	terajoules	terajoules	terajoules	terajoules
Residential	14 714	76 616	1 497	7 536	n.p.	—	2	2 744	103 109
Commercial	11 513	21 786	1 310	3 350	n.p.	—	75	2 209	40 243
Industrial	75 324	77 162	8 975	30 591	n.p.	—	14	99	192 165
<b>Total</b>	<b>101 551</b>	<b>175 564</b>	<b>11 782</b>	<b>41 477</b>	<b>n.p.</b>	<b>—</b>	<b>92</b>	<b>5 052</b>	<b>335 517</b>

(a) Excludes the ACT. (b) Includes Albury. (c) Natural gas not available in Tasmania. (d) Excludes Western Australia.

Source: The Australian Gas Association, 1998.

## Electricity and gas operations

Table 18.14 presents summary information on the performance, assets and liabilities of the electricity industry. The industry shows a trend of declining total employment. Given that the gross product of the industry has not changed markedly over the last three years, the fall in employment has given rise to increasing labour productivity (gross product per person employed). Employment decreased by 7% from 39,977 persons at the end of June 1996 to

37,091 persons at the end of June 1997. The industry gross product increased by 4% from \$8,559m in 1995–96 to \$8,878 in 1996–97.

Table 18.15 shows electricity generation by State from 1992–93 to 1997–98. Electricity generation increased by nearly 5% from 1996–97 to 1997–98. Most of this increase can be attributed to Victoria where electricity generation increased by about 5,000 kWh over the period. New South Wales contributed about 35% of total electricity generation in 1997–98, but showed a decrease in generation for the first time since 1992–93.

**18.14 ELECTRICITY INDUSTRY, Summary Measures of Performance, Assets and Liabilities**

	Unit	1994–95	1995–96	1996–97
Industry gross product				
Turnover	\$m	21 209.0	21 126.5	21 196.0
Plus closing stocks	\$m	838.5	687.4	527.4
Less opening stocks	\$m	796.8	768.9	687.2
Less purchases and selected expenses	\$m	12 612.0	12 486.2	12 158.1
<i>Industry gross product</i>	\$m	8 638.7	8 558.7	8 878.1
Income and expenditure				
Sales of goods and services	\$m	20 299.2	20 144.3	20 151.4
Purchases and selected expenses	\$m	12 612.0	12 486.2	12 158.1
Plus opening stocks	\$m	796.8	768.9	687.2
Less closing stocks	\$m	838.5	687.4	527.4
Equals cost of sales	\$m	12 570.3	12 567.7	12 317.9
Trading profit (sales less cost of sales)	\$m	7 728.9	8 116.1	8 387.9
Plus other income	\$m	1 029.6	1 036.9	1 180.8
Less selected labour costs	\$m	2 443.2	2 510.2	2 287.5
Less depreciation	\$m	2 313.4	2 253.6	2 364.7
Less other expenses	\$m	140.0	132.8	124.2
Equals earnings before interest and tax	\$m	3 861.9	4 551.7	5 054.3
Less interest expenses	\$m	2 414.9	2 449.5	2 457.1
<i>Operating profit before tax</i>	\$m	1 447.0	2 102.2	2 597.2
Assets and liabilities				
Total value of assets	\$m	65 206.9	65 872.8	67 591.7
Total value of liabilities	\$m	35 041.4	36 325.9	36 312.8
<i>Net worth</i>	\$m	30 165.5	29 546.9	31 278.9
Selected performance measures				
Asset turnover	%	0.3	0.3	0.3
Trading profit margin	%	38.1	40.3	41.6
Liquidity ratio	times	0.8	0.9	0.6
Debt to assets	%	54.4	55.7	54.2
Industry gross product to employment	\$'000/employee	194.5	214.1	239.4
Other				
Management units at 30 June	no.	71.0	57.0	58.0
Employment at 30 June	no.	44 425.0	39 977.0	37 091.0

Source: Electricity, Gas, Water and Sewerage Operations, Australia (8226.0).

**18.15 ELECTRICITY GENERATION(a)**

	NSW(b)	Vic.	Qld	SA(c)	WA	Tas.	Aust.
Financial year	million kWh	million kWh	million kWh	million kWh	million kWh	million kWh	million kWh
1992–93	57 794	37 576	30 404	10 227	15 007	8 864	<b>159 872</b>
1993–94	57 792	37 019	31 831	10 560	15 755	8 855	<b>161 813</b>
1994–95	60 016	36 043	33 517	10 044	16 756	8 688	<b>165 063</b>
1995–96	62 047	36 621	33 618	8 734	17 422	9 100	<b>167 543</b>
1996–97	62 788	35 400	34 779	9 167	16 738	9 543	<b>168 415</b>
1997–98	61 804	40 335	n.p.	n.p.	17 203	9 700	<b>176 211</b>

(a) Statistics relate to generation of electricity within each State and take no account of interchange between States. (b) Includes the ACT. (c) Includes the NT.

Source: *Manufacturing Production, Australia: Energy Products (8368.0)*.

Tables 18.16 to 18.18 present statistics for the natural gas industry relating to its operations, performance, assets and liabilities. In 1996–97, 2,485 km of pipeline were laid and a total of 81,664 km of pipeline in Australia's natural gas reticulation and transmission system were in use. Table 18.17 shows that the natural gas industry generated revenue of \$2,543m in 1996–97, an increase of \$118m over 1995–96. Gross product

of the gas industry declined from \$864m in 1995–96 to \$855m in 1996–97, as shown in table 18.18. Other income of the industry was significantly negative, falling by \$228m from 1995–96 to 1996–97. This resulted from a large payment made by Gas and Fuel Victoria as settlement of a dispute with Bass Strait gas producers.

**18.16 NATURAL GAS RETICULATION AND TRANSMISSION, Mains Laid and Mains in Use by State/Territory—1996–97**

	NSW	Vic.	Qld	SA	WA	Tas.(a)	NT	ACT	Aust.
Reticulation mains	km	km	km	km	km	km	km	km	km
CONSTRUCTION MAINS LAID									
Low and medium pressure	303	8	79	–63	202	—	—	33	562
High pressure	38	514	1	101	–12	—	13	—	655
Transmission—high pressure	—	—	400	0	858	—	10	—	1 268
<b>Total</b>	<b>341</b>	<b>522</b>	<b>479</b>	<b>38</b>	<b>1 048</b>	<b>—</b>	<b>23</b>	<b>33</b>	<b>2 485</b>
TOTAL PIPELINE NETWORK IN USE									
Low and medium pressure	18 856	7 189	3 381	3 308	9 246	—	4	3 042	45 026
High pressure	1 359	17 202	138	3 053	549	—	33	210	22 544
Transmission—high pressure	2 042	1 962	2 103	1 344	4 393	—	2 250	—	14 093
<b>Total</b>	<b>22 257</b>	<b>26 353</b>	<b>5 622</b>	<b>7 705</b>	<b>14 188</b>	<b>—</b>	<b>2 286</b>	<b>3 252</b>	<b>81 664</b>

(a) Natural gas not available in Tasmania.

Source: *The Australian Gas Association, 1998*.

**18.17 NATURAL GAS OPERATIONS OF UTILITIES, Revenue by State/Territory—1996–97**

	NSW(a)	Vic(a)	Qld	SA	WA	Tas.(b)	NT	ACT	Aust.
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Residential	195.8	715.6	n.p.	n.p.	n.p.	—	—	30.6	n.a.
Commercial	108.6	140.1	n.p.	n.p.	n.p.	—	1.0	20.7	n.a.
Industrial	395.4	284.1	n.p.	n.p.	n.p.	—	n.p.	0.9	n.a.
<b>Total</b>	<b>699.8</b>	<b>1 139.7</b>	<b>104.5</b>	<b>242.9</b>	<b>302.6</b>	<b>—</b>	<b>1.0</b>	<b>52.3</b>	<b>2 542.8</b>

(a) Sales in Albury, New South Wales were included in Victoria. (b) Natural gas not available in Tasmania.

Source: *The Australian Gas Association, 1998*.

**18.18 GAS INDUSTRY, Summary Measures of Performance, Assets and Liabilities**

	Unit	1994–95	1995–96	1996–97
Industry gross product				
Turnover	\$m	2 803.0	2 746.7	2 780.3
Plus closing stocks	\$m	45.8	37.4	31.9
Less opening stocks	\$m	53.1	45.1	38.1
Less purchases and selected expenses	\$m	1 913.6	1 875.5	1 919.2
<i>Industry gross product</i>	<i>\$m</i>	<i>882.0</i>	<i>863.5</i>	<i>855.0</i>
Income and expenditure				
Sales of goods and services	\$m	2 719.9	2 622.1	2 709.6
Purchases and selected expenses	\$m	1 913.6	1 875.5	1 919.2
Plus opening stocks	\$m	53.1	45.1	38.1
Less closing stocks	\$m	45.8	37.4	31.9
Equals cost of sales	\$m	1 920.9	1 883.2	1 925.4
Trading profit (sales less cost of sales)	\$m	798.9	836.7	838.9
Plus other income	\$m	22.0	32.7	-195.3
Less selected labour costs	\$m	324.5	313.4	295.8
Less depreciation	\$m	117.8	138.1	169.0
Less other expenses	\$m	8.7	12.5	13.8
Equals earnings before interest and tax	\$m	370.0	426.2	175.0
Less interest expenses	\$m	53.4	111.9	126.7
<i>Operating profit before tax</i>	<i>\$m</i>	<i>316.6</i>	<i>314.3</i>	<i>48.4</i>
Assets and liabilities				
Total value of assets	\$m	3 015.9	3 934.3	4 485.3
Total value of liabilities	\$m	1 432.8	2 093.2	2 719.6
<i>Net worth</i>	<i>\$m</i>	<i>1 583.1</i>	<i>1 841.1</i>	<i>1 765.7</i>
Selected performance measures				
Asset turnover	%	0.9	0.7	0.6
Trading profit margin	%	29.4	31.9	31.0
Liquidity ratio	times	0.8	0.8	1.1
Debt to assets	%	48.2	53.7	61.1
Other				
Management units at 30 June	no.	17.0	13.0	11.0
Employment at 30 June	no.	6 738.0	4 950.0	4 195.0

Source: *Electricity, Gas, Water and Sewerage Operations, Australia* (8226.0).

## Energy initiatives

In November 1997, the Prime Minister announced a range of initiatives in a statement '*Safeguarding the Future: Australia's Response to Climate Change*'. The initiatives are intended to slow the growth in greenhouse gas emissions across many sectors including the energy sector. Some of these initiatives are outlined below.

Renewable energy sources currently contribute about 6% to Australia's total energy needs. The Government will encourage an increased contribution from renewable energy sources by creating a renewable energy innovation investment fund. The fund will provide government and private sector venture capital for companies with high growth potential. A loans and grants program for the development and commercialisation of the renewable energy industry will also be established.

Other initiatives include funding for renewable energy 'showcase' projects in areas such as tidal power, solar thermal power and photovoltaic technologies. The Government will also work with the States and Territories to set a mandatory target for electricity retailers to source an additional 2% of their electricity from renewable energy sources by the year 2010. This is intended to accelerate the uptake of renewable energy in grid-based power applications.

By improving the economic efficiency of energy supply, the Government plans to lower the rate of growth of greenhouse emissions. Energy market reforms will be expanded to extend electricity reform and to deliver integrated and compatible national frameworks for gas and electricity by the year 2002.

The Government will also work with the States and industry to develop and implement, by the year 2000, efficiency standards for fossil fuel electricity generation, in an effort to deliver reductions in the greenhouse gas intensity of energy supply. The standards will apply to both new electricity generation projects and existing generation.

The combined measures presented in the Prime Minister's statement are expected to reduce Australia's net emissions growth from 28% to 18% over the period from 1990 to 2010, the equivalent of 39 million tonnes of emissions.

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Australian Bureau of Agricultural and Resource Economics 1998, *Energy Database*, Canberra.

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International Energy Agency 1998, *Energy Balances of OECD Countries*, Paris.

Prime Minister of Australia 1997, *Safeguarding the Future: Australia's Response to Climate Change*.

The Australian Gas Association, *Gas Statistics Australia*, 1998, Canberra.

### Web sites

Energy Australia, <http://www.energy.com.au>

Organisation for Economic Cooperation and Development, <http://www.oecd.org>

### Other sources

The following organisations also produce energy statistics:

Australian Institute of Petroleum;

Electricity Supply Association of Australia;

Department of Industry, Science and Resources; and

Joint Coal Board.

State government departments and instrumentalities are also important sources of energy data, particularly at the regional level. A number of private corporations and other entities operating within the energy field also publish or make available a significant amount of information.





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## Introduction

**M**anufacturing broadly relates to the physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machinery or by hand.

The manufacturing industry is an important sector of the Australian economy, contributing about 13% of Australia's gross domestic product (GDP) and about 13% of employment. However, despite significant increases in the value of the manufacturing industry's gross product (increasing by around 16% over the past ten years), the industry's share of Australian GDP has fallen over the past 20 years from around 18% to its current 13%.

Similarly, employment in the manufacturing industry has fallen from around 1.1 million persons 20 years ago to 946,300 persons at June 1997.

This chapter presents a range of data about the manufacturing sector as a whole, and about broad categories of manufacturing industry. These categories are referred to as 'subdivisions'.

Some data are provided from the annual manufacturing survey, for which the latest results relate to 1996–97, while others are derived from various monthly and quarterly surveys, for which the latest results relate to 1997–98.

## Manufacturing trends

Changes in manufacturing production at constant prices described below are based on quarterly production-based estimates of manufacturing industry gross product at 1989–90 prices.

Manufacturing production in 1997–98 was 13% higher than five years earlier, 16% higher than ten years earlier and 36% higher than 15 years earlier.

Over the period from 1992–93 to 1997–98, the index of manufacturing production increased steadily (table 19.1).

Over the five years from 1992–93 to 1997–98, production rose in six of the nine manufacturing subdivisions. The largest growth for the period was recorded in Machinery and equipment manufacturing (up 30%), Petroleum, coal, chemical and associated product manufacturing (up 18%), Printing, publishing and recorded media (up 17%) and Other manufacturing (up 17%). Of the three subdivisions where growth fell, the largest decline came from Non-metallic mineral product manufacturing (down 11.5%).

## Structure of the manufacturing industry

At 30 June 1997, manufacturing establishments in Australia employed 946,300 persons. During 1996–97 those establishments paid \$32,634m in wages and salaries and recorded \$208,348m in turnover (table 19.2).

**19.1 MANUFACTURING INDUSTRY GROSS PRODUCT, Indexes(a)**

Industry subdivision	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Food, beverage and tobacco manufacturing	104.7	107.8	108.7	111.6	111.9	117.1
Textile, clothing, footwear and leather manufacturing	89.5	90.2	89.0	88.0	91.9	88.3
Wood and paper product manufacturing	101.7	105.0	109.0	105.2	112.7	118.2
Printing, publishing and recorded media	96.7	100.5	107.5	104.2	102.5	112.8
Petroleum, coal, chemical and associated product manufacturing	104.6	110.0	113.6	117.2	116.9	123
Non-metallic mineral product manufacturing	95.5	97.8	99.5	92.0	88.6	84.5
Metal product manufacturing	97.3	101.3	100.2	104.2	102.9	95.3
Machinery and equipment manufacturing	92.5	101.6	112.7	115.8	121.4	120.4
Other manufacturing	83.2	88.5	92.1	87.8	90.0	97.4
<b>Total manufacturing</b>	<b>97.4</b>	<b>102.3</b>	<b>106.2</b>	<b>107.4</b>	<b>108.9</b>	<b>110.2</b>

(a) Average 1989–90 prices. Reference base year 1989–90 = 100.0.

Source: Australian National Accounts: National Income, Expenditure and Product (5206.0).

## 19.2 MANUFACTURING, Summary of Operations By Industry—1996–97

Industry subdivision	Employment at 30 June(a)	Wages and salaries(b)	Turnover	Turnover per person employed
	'000	\$m	\$m	\$'000
Food, beverage and tobacco manufacturing	164.0	5 610	44 978	274
Textile, clothing, footwear and leather manufacturing	77.0	2 013	9 935	129
Wood and paper product manufacturing	61.5	2 020	11 481	187
Printing, publishing and recorded media	96.7	3 335	14 868	154
Petroleum, coal, chemical and associated product manufacturing	93.4	3 806	32 863	352
Non-metallic mineral product manufacturing	37.1	1 373	8 622	232
Metal product manufacturing	150.2	5 568	37 894	252
Machinery and equipment manufacturing	207.5	7 497	41 260	199
Other manufacturing	57.9	1 412	6 446	111
<b>Total manufacturing</b>	<b>946.3</b>	<b>32 634</b>	<b>208 348</b>	<b>220</b>

(a) Includes working proprietors. (b) Excludes the drawings of working proprietors.

Source: *Manufacturing Industry, Australia* (8221.0).

The manufacturing subdivisions with the most persons employed at 30 June 1997 were Machinery and equipment manufacturing (207,500), Food, beverage and tobacco manufacturing (164,000) and Metal product manufacturing (150,200). Non-metallic mineral product manufacturing (37,100) was the smallest employer, accounting for only 3.9% of manufacturing employment. Further information on manufacturing employment is contained in tables 19.4 and 19.5.

Food, beverage and tobacco manufacturing was the largest contributor to total manufacturing turnover. Its turnover of \$44,978m was 22% of the total for manufacturing. Other subdivisions making major contributions were Machinery and equipment manufacturing (20%), Metal product manufacturing (18%) and Petroleum, coal, chemical and associated product manufacturing (16%).

### Turnover

Turnover is a key measure of the performance of establishments in an industry. It covers the sales of goods and services by an establishment (together with transfers of goods to other parts of the same business) and also includes all other

operating revenue generated by the establishment.

New South Wales and Victoria each contributed about 33% of national manufacturing turnover in 1996–97 (table 19.3). New South Wales contributed 45% of the national turnover of the Printing, publishing and recorded media industry, and 26% to 37% of the national turnover of the remaining manufacturing industries. Victoria contributed 47% of the national turnover of the Textile, clothing, footwear and leather manufacturing industry, 43% of the national turnover of the Machinery and equipment manufacturing industry and 22% to 35% of the national turnover of the remaining manufacturing industries. Although Queensland accounted for only 15% of national manufacturing turnover, it contributed 21% of national turnover for Non-metallic mineral product manufacturing and 20% for Food, beverages and tobacco manufacturing. South Australia, which accounted for 9% of national manufacturing turnover, contributed 17% of national turnover for Machinery and equipment manufacturing.

**19.3 MANUFACTURING INDUSTRY TURNOVER, By State/Territory—1996–97**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Industry subdivision	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Food, beverage and tobacco manufacturing	13 339	14 037	8 880	4 084	3 131	1 357	86	65	44 978
Textile, clothing, footwear and leather manufacturing	3 299	4 712	585	761	363	198	9	8	9 935
Wood and paper product manufacturing	3 526	3 415	1 708	910	713	1 140	27	42	11 481
Printing, publishing and recorded media	6 759	4 584	1 436	805	847	181	40	216	14 868
Petroleum, coal, chemical and associated product manufacturing	11 869	11 608	4 749	1 362	3 082	170	21	3	32 863
Non-metallic mineral product manufacturing	2 720	2 085	1 828	605	1 024	241	74	45	8 622
Metal product manufacturing	13 930	8 468	6 500	2 539	4 813	1 015	593	35	37 894
Machinery and equipment manufacturing	10 639	17 559	3 442	6 918	2 183	378	48	94	41 260
Other manufacturing	1 985	2 049	1 092	564	632	63	17	44	6 446
<b>Total manufacturing</b>	<b>68 065</b>	<b>68 515</b>	<b>30 220</b>	<b>18 550</b>	<b>16 789</b>	<b>4 743</b>	<b>916</b>	<b>551</b>	<b>208 348</b>

Source: *Manufacturing Industry, Australia, Preliminary (8221.0)*.

**Employment**

New South Wales (33%) and Victoria (33%) dominate manufacturing employment in Australia, accounting for almost two-thirds of national manufacturing employment as at 30 June 1997. In all industries, New South Wales and Victoria are the two largest employing States. However, different industries predominate, in terms of employment, in different States (table 19.4).

New South Wales manufacturing establishments employ 41% of persons in Printing, publishing and recorded media, and 36% of those in the Metal product manufacturing industry. Some

48% of all persons working in the Textile, clothing, footwear and leather manufacturing industry are employed in Victoria.

Queensland establishments employ 21% of persons in Food, beverage and tobacco manufacturing and 20% of those in Non-metallic mineral product manufacturing. South Australia accounts for 14% of employment in the Machinery and equipment manufacturing industry.

For further information on employed wage and salary earners and the characteristics of the manufacturing labour force, refer to *Chapter 6, Labour*.

**19.4 MANUFACTURING INDUSTRY EMPLOYMENT(a), By State/Territory—June 1997**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Industry subdivision	'000	'000	'000	'000	'000	'000	'000	'000	'000
Food, beverage and tobacco manufacturing	48.5	46.4	34.3	15.2	13.0	5.6	0.5	0.3	164.0
Textile, clothing, footwear and leather manufacturing	24.2	37.1	5.8	4.8	3.3	1.5	0.1	0.1	77.0
Wood and paper product manufacturing	19.1	17.3	10.8	5.7	4.4	3.8	0.2	0.2	61.5
Printing, publishing and recorded media	39.5	29.6	12.0	5.7	6.5	1.6	0.5	1.5	96.7
Petroleum, coal, chemical and associated product manufacturing	32.4	36.2	10.8	6.6	6.5	0.8	0.1	0.0	93.4
Non-metallic mineral product manufacturing	11.5	9.3	7.6	2.6	5.0	0.8	0.2	0.1	37.1
Metal product manufacturing	53.7	39.0	25.2	11.4	16.1	3.4	1.3	0.3	150.2
Machinery and equipment manufacturing	64.5	73.5	24.3	28.2	12.8	3.1	0.4	0.6	207.5
Other manufacturing	16.9	18.1	10.6	5.2	5.8	0.8	0.2	0.3	57.9
<b>Total manufacturing</b>	<b>310.2</b>	<b>310.0</b>	<b>141.3</b>	<b>85.5</b>	<b>73.3</b>	<b>21.6</b>	<b>3.4</b>	<b>3.6</b>	<b>946.3</b>

(a) Includes working proprietors.

Source: *Manufacturing Industry, Australia (8221.0)*.

**19.5 CONCENTRATION OF EMPLOYMENT, Manufacturing Establishments—June 1997**

Industry subdivision	Enterprise groups ranked by turnover							
	4 largest		5th to 8th largest		9th to 12th largest		Remainder	
	'000	%	'000	%	'000	%	'000	%
Food, beverage and tobacco manufacturing	20.0	12	9.4	6	9.4	6	125.2	76
Textile, clothing, footwear and leather manufacturing	6.4	8	2.9	4	1.7	2	65.9	86
Wood and paper product manufacturing	13.0	21	5.2	8	2.0	3	41.2	67
Printing, publishing and recorded media	17.9	19	7.7	8	4.7	5	66.5	69
Petroleum, coal, chemical and associated product manufacturing	7.3	8	6.6	7	3.9	4	75.6	81
Non-metallic mineral product manufacturing	12.6	34	3.3	9	1.5	4	19.6	53
Metal product manufacturing	26.1	17	6.3	4	3.4	2	114.5	76
Machinery and equipment manufacturing	15.6	8	16.5	8	5.8	3	169.5	82
Other manufacturing	2.3	4	1.3	2	0.4	1	53.9	93
<b>Total manufacturing</b>	<b>45.0</b>	<b>5</b>	<b>20.2</b>	<b>2</b>	<b>21.1</b>	<b>2</b>	<b>859.5</b>	<b>91</b>

Source: Unpublished data, Manufacturing Industry.

### Concentration of employment within the manufacturing industry

Concentration statistics provide information on the extent to which particular groups of related enterprises (enterprise groups) contribute to economic activity in individual industries. The percentages are an indicator of the degree of competition existing between enterprise groups engaged in an industry. Enterprise groups are ranked in size (in terms of turnover for the relevant industry) from largest to smallest. The largest 12 enterprise groups are then formed into three groupings of four, and employment data are compiled for these groupings and for the remaining enterprise groups.

As table 19.5 shows, the four largest enterprise groups (in terms of turnover) in the manufacturing industry employed around 45,000 people at the end of June 1997. This accounted for 5% of all people employed in the manufacturing industry. The most concentrated subdivisions (i.e. those where the four largest enterprise groups have the greatest share of employment) were Non-metallic mineral product manufacturing (34%), Wood and paper product manufacturing (21%) and Printing, publishing and recorded media (19%). Subdivisions with the lowest levels of concentration were Textile, clothing, footwear and leather manufacturing (8%), Petroleum, coal, chemical and associated product manufacturing (8%), Machinery and equipment manufacturing (8%) and Other manufacturing (4%).

### Industrial disputes

There were 78 industrial disputes in the manufacturing industry during calendar year 1997. These disputes involved just under 66,000 employees and resulted in the loss of nearly 146,000 working days (table 19.6). Compared with 1996, this represented a substantial fall (30%) in the number of disputes. In contrast, the number of employees involved in industrial disputes rose sharply (35%), and this was also reflected in an overall increase in the number of working days lost (up 41%). The number of industrial disputes in manufacturing has fallen in each of the last three years, while the number of employees involved and working days lost both fell between 1995 and 1996 before rising again in 1997.

Manufacturing industry accounted for 17% of all industrial disputes during 1997 compared with 21% in 1996. Manufacturing industry employees involved in industrial disputes made up 21% of all employees involved in disputes during 1997, a marked increase on the 8% recorded for 1996 and similar to the levels experienced in 1995 and 1994 (25% and 19% respectively). Working days lost due to manufacturing industrial disputes accounted for 27% of working days lost during 1997, representing a substantial increase on the 11% share recorded in 1996 and similar to the 1995 and 1994 levels (29% and 25% respectively).

**19.6 INDUSTRIAL DISPUTES**

Year	Manufacturing	All industries
<b>TOTAL INDUSTRIAL DISPUTES (no.)</b>		
1994	164	560
1995	156	643
1996	112	543
1997	78	447
<b>EMPLOYEES INVOLVED DIRECTLY AND INDIRECTLY ('000)</b>		
1994	50.2	265.1
1995	86.1	344.3
1996	48.8	577.7
1997	65.8	310.1
<b>WORKING DAYS LOST ('000)</b>		
1994	123.2	501.0
1995	159.9	547.6
1996	103.5	928.5
1997	145.6	534.2

Source: *Industrial Disputes, Australia* (6322.0).

**Trade union membership**

The 11 year period from 1986 to 1997 marked a fall in the proportion of manufacturing employees with trade union membership, from slightly more than 51% to a little less than 37%. This represented a decrease in union membership of 167,200 manufacturing employees over that period. Membership fell generally steadily over the period, with the largest two year fall being nearly 4% between 1992 and 1994. The fall from 1996 to 1997 was 2.1%. Despite the large fall in membership numbers, the manufacturing industry continues to have a higher rate of union membership than the average for all industries (table 19.7).

In percentage terms, union membership in all industries has followed a downward trend similar to that in manufacturing.

While 39.3% of full-time manufacturing employees belonged to a trade union in 1997 (table 19.8), only 13% of part-time manufacturing employees were union members. These proportions have both fallen since 1996 (down 1.5% and 7.1% respectively). Membership rates for full-time female employees (27.2%) were significantly lower than for full-time male employees (42.3%).

**19.8 PROPORTION OF TRADE UNION MEMBERS, By Sex—August 1997**

	Manufacturing	All industries
Employees	%	%
<b>MALES</b>		
Full-time	42.3	35.3
Part-time	19.0	17.5
Total	41.1	33.0
<b>FEMALES</b>		
Full-time	27.2	30.4
Part-time	9.5	22.6
Total	22.5	26.9
<b>PERSONS</b>		
Full-time	39.3	33.7
Part-time	13.0	21.3
Total	36.6	30.3

Source: *Weekly Earnings of Employees (Distribution), Australia* (6310.0).

**19.7 EMPLOYEES WITH TRADE UNION MEMBERSHIP**

Period	Manufacturing		All industries	
	Trade union members	Proportion of total employment	Trade union members	Proportion of total employment
	'000	%	'000	%
August 1986	545.4	51.2	2 593.9	45.6
August 1988	546.7	48.5	2 535.9	41.6
August 1990(a)	520.9	46.1	2 659.6	40.5
August 1992	455.3	44.4	2 508.8	39.6
August 1994	421.6	40.8	2 283.4	35.0
August 1996	410.1	38.7	2 194.3	31.1
August 1997	378.2	36.6	2 110.3	30.3

(a) Excludes persons aged 70 years and over.

Source: *Trade Union Members, Australia* (6325.0); *Weekly Earnings of Employees (Distribution), Australia* (6310.0).

**19.9 PRIVATE NEW CAPITAL EXPENDITURE IN MANUFACTURING INDUSTRY**

	1995-96	1996-97	1997-98
Industry subdivision	\$m	\$m	\$m
Food, beverage and tobacco manufacturing	1 895	1 997	2 408
Textile, clothing, footwear and leather manufacturing	271	251	287
Wood and paper product manufacturing	1 112	920	901
Printing, publishing and recorded media	673	587	790
Petroleum, coal, chemical and associated product manufacturing	1 719	1 664	1 578
Non-metallic mineral product manufacturing	756	1 071	880
Metal product manufacturing	2 192	1 501	1 671
Machinery and equipment manufacturing	1 611	2 007	2 125
Other manufacturing	227	199	302
<b>Total manufacturing</b>	<b>10 457</b>	<b>10 198</b>	<b>10 942</b>

Source: Private New Capital Expenditure, Australia, Actual and Expected Expenditure (5626.0).

**Capital expenditure**

As table 19.9 shows, new capital expenditure by private sector businesses in the manufacturing industry rose by 7% between 1996-97 and 1997-98 after a fall of 2.5% between 1995-96 and 1996-97. Six of the nine manufacturing subdivisions experienced an increase in new capital expenditure, the greatest increase coming from Other manufacturing (up 52%) followed by Printing, publishing and recorded media (up 35%) and Food, beverage and tobacco manufacturing (up 21%). Of the three subdivisions which decreased their capital expenditure, the greatest fall came from Non-metallic mineral product manufacturing (down 18%).

Comparing private new capital expenditure levels in 1997-98 with two years earlier shows higher levels in six of the nine manufacturing subdivisions. Largest increases were in Other manufacturing (33%), Machinery and equipment

manufacturing (up 32%) and Food, beverage and tobacco manufacturing (up 27%). Although the Metal product manufacturing industry increased its capital expenditure by 11% between 1996-97 and 1997-98, its expenditure was still 24% lower than in 1995-96.

**Sales and output**

At average 1989-90 prices, output (sales adjusted for changes in the level of stocks) by private manufacturing businesses increased by 1.5% between 1996-97 and 1997-98 (table 19.10). Five manufacturing subdivisions increased output, with Printing, publishing and recorded media (by 18%) and Other manufacturing (by 8.5%) showing the largest rises. The remaining four subdivisions recorded falls between 1996-97 and 1997-98. The largest decrease was by Metal product manufacturing (by 8%).

**19.10 SALES AND OUTPUT(a), Private Manufacturing Businesses**

Industry subdivision	Sales of goods produced		Output of goods	
	1996-97	1997-98	1996-97	1997-98
	\$m	\$m	\$m	\$m
Food, beverage and tobacco manufacturing	36 430	37 946	36 501	38 287
Textile, clothing, footwear and leather manufacturing	8 094	7 944	8 144	7 983
Wood and paper product manufacturing	11 552	12 081	11 684	12 159
Printing, publishing and recorded media	7 238	8 333	7 172	8 439
Petroleum, coal, chemical and associated product manufacturing	31 320	32 894	31 164	31 141
Non-metallic mineral product manufacturing	8 341	7 985	8 411	7 789
Metal product manufacturing	30 321	27 322	29 887	27 414
Machinery and equipment manufacturing	34 245	33 945	34 046	34 222
Other manufacturing	5 552	5 856	5 498	5 967
<b>Total manufacturing</b>	<b>173 095</b>	<b>174 305</b>	<b>172 512</b>	<b>175 126</b>

(a) Average 1989-90 Prices. Output is calculated as sales of goods produced minus opening stocks plus closing stocks.

Source: Stocks and Sales, Selected Industries, Australia (5629.0).



The largest contributors to manufacturing output were Food, beverage and tobacco manufacturing (22%), Machinery and equipment manufacturing (20%), Petroleum, coal, chemical and associated product manufacturing (18%) and Metal product manufacturing (16%).

At average 1989–90 prices, the value of sales by private manufacturing businesses in 1997–98 was just 0.7% higher than for 1996–97. In general, changes in sales from 1996–97 to 1997–98 and industry contributions to total manufacturing sales were similar to those for output. However, two exceptions were Petroleum, coal, chemical and associated product manufacturing, for which sales grew (by 5%) but output fell slightly (by 0.1%), and Machinery and equipment manufacturing where sales fell (by 1%) but output grew (by 0.5%).

At average 1989–90 prices, the value of stocks held by private manufacturing businesses at June 1998 was 3% higher than at June 1997. Stocks held increased in seven subdivisions, with the largest increases in Other manufacturing (up 20%) and Printing, publishing and recorded media (up 15%). The two subdivisions where stocks held fell were Non-metallic mineral product manufacturing (down 16%) and

Petroleum, coal, chemical and associated product manufacturing (down 0.5%).

## Company profits

Profits before income tax earned by incorporated manufacturing businesses rose by 15% between 1996–97 and 1997–98, following a fall of 5.5% from 1995–96 (table 19.11). Profits rose between 1996–97 and 1997–98 in all but one manufacturing subdivision, Machinery and equipment manufacturing, which fell by 18%. Largest increases were for Other manufacturing (59.5%), Metal product manufacturing (32%) and Food, beverage and tobacco manufacturing (30%).

Industry subdivisions contributing most to manufacturing industry profits for 1997–98 were Food, beverage and tobacco manufacturing (25.5%), Petroleum, coal, chemical and associated product manufacturing (19%), Metal product manufacturing (17%) and Machinery and equipment manufacturing (13%).

## Principal manufactured commodities

Table 19.12 shows the total production of selected manufactured commodities for the three years 1995–96 to 1997–98.

**19.11 PROFITS BEFORE INCOME TAX, Manufacturing Companies**

	1995–96	1996–97	1997–98
Industry subdivision	\$m	\$m	\$m
Food, beverage and tobacco manufacturing	2 291	2 285	2 962
Textile, clothing, footwear and leather manufacturing	269	202	233
Wood and paper product manufacturing	731	625	683
Printing, publishing and recorded media	1 127	1 098	1 198
Petroleum, coal, chemical and associated product manufacturing	2 114	1 925	2 259
Non-metallic mineral product manufacturing	754	602	719
Metal product manufacturing	1 656	1 502	1 985
Machinery and equipment manufacturing	1 774	1 842	1 509
Other manufacturing	56	42	67
<b>Total manufacturing</b>	<b>10 711</b>	<b>10 126</b>	<b>11 615</b>

Source: *Company Profits, Australia* (5651.0).

**19.12 SELECTED COMMODITIES PRODUCED BY MANUFACTURING ESTABLISHMENTS(a)**

Commodity	Unit of quantity	1995-96	1996-97	1997-98
Red meat	'000 t	2 652	2 716	2 916
Chicken meat	'000 t	481	497	550
Cheese	'000 t	264	285	n.y.a.
Butter	'000 t	145	147	n.y.a.
Beer(b)	mill. L	1 743	1 735	1 757
Tobacco and cigarettes	t	20 390	22 193	21 275
Newsprint	'000 t	446	422	402
Wood pulp	'000 t	1 019	949	982
Undressed sawn timber	'000 m <sup>3</sup>	3 444	3 382	n.y.a.
Hardwood woodchips	'000 t	4 828	4 779	5 665
Automotive gasoline	mill. L	18 358	18 084	18 589
Fuel oil	mill. L	1 998	1 795	1 662
Aviation turbine fuel	mill. L	4 882	5 284	5 423
Automotive diesel oil	mill. L	12 202	12 968	13 183
Portland cement	'000 t	6 397	6 701	7 236
Clay bricks	mill	1 455	1 468	1 532
Ready mixed concrete	'000 m <sup>3</sup>	14 556	15 544	17 412
Basic iron, spiegeleisen and sponge iron	'000 t	7 553	7 346	7 928
Blooms and slabs of iron or steel	'000 t	7 951	7 775	8 356
Alumina	'000 t	13 312	13 253	n.y.a.
Zinc	'000 t	330	319	n.y.a.
Silver	'000 t	351	340	n.y.a.
Copper	'000 t	282	305	n.y.a.
Lead	'000 t	223	202	n.y.a.
Tin	'000 t	550	570	n.y.a.
Gold	'000 t	318	327	n.y.a.
Electricity	mill. kWh	167 544	168 415	179 239
Gas(c)	PJ	621	636	649

(a) Data in this table exclude production by single establishment businesses employing fewer than four persons. (b) Includes ale, stout and porter. Excludes extra light beer containing less than 1.15% by volume of alcohol. (c) Available for issue through mains. Includes natural gas.

Source: *Manufacturing Production, Australia* (8301.0).

## Price indexes

The ABS compiles two price indexes relating to the manufacturing sector: the Price Indexes of Materials Used in Manufacturing Industries; and

the Price Indexes of Articles Produced by Manufacturing Industries (see *Chapter 28, Prices* for more details). Tables 19.13 and 19.14 set out index numbers for selected components of those indexes.

**19.13 PRICE INDEXES, Materials Used in Manufacturing Industries(a)(b)**

Industry	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Food, beverages and tobacco	100.0	104.3	107.7	111.0	111.7	106.2	110.0
Textiles and textile products	87.0	88.1	89.9	103.0	100.9	93.0	96.3
Knitting mills and clothing	104.5	108.1	107.7	109.3	111.4	105.9	107.1
Footwear	99.8	99.4	102.4	109.5	111.7	111.0	109.7
Leather and leather products	85.3	93.2	99.6	101.9	95.1	95.0	91.9
Sawmilling and timber products	104.5	109.2	115.3	111.3	114.0	113.7	119.8
Paper and paper products	96.3	95.6	89.7	95.8	108.3	97.0	96.4
Printing and publishing	102.5	103.3	102.7	101.1	114.1	105.8	105.5
Petroleum and coal products	112.6	121.7	101.9	100.2	103.5	117.2	108.4
Chemicals	106.2	105.7	103.5	107.8	113.9	110.7	111.9
Rubber and plastics	100.3	104.5	106.9	118.8	122.0	113.4	113.4
Non-metallic mineral products	115.2	116.6	109.8	114.3	113.7	113.1	112.6
Basic metal products	95.4	94.7	87.6	94.0	99.4	93.1	93.4
Fabricated metal products	101.3	100.9	100.8	104.4	108.7	106.2	107.3
Transport equipment and parts	101.9	108.0	115.0	116.2	115.1	110.1	113.5
Electronic equipment and other machinery	99.8	101.8	102.7	106.5	107.8	102.7	104.6
Other manufacturing	103.4	106.3	111.5	112.3	112.8	110.9	113.8
<b>All materials</b>	<b>101.4</b>	<b>106.4</b>	<b>104.7</b>	<b>107.6</b>	<b>110.1</b>	<b>106.0</b>	<b>107.0</b>

(a) Reference base year 1989–90 = 100.0. (b) The index is on a net basis and relates in concept only to materials that enter Australian manufacturing industry from other sectors of the Australian economy or from overseas.

Source: *Price Indexes of Materials Used in Manufacturing Industries, Australia* (6411.0).

**19.14 PRICE INDEXES, Articles Produced by Manufacturing Industries(a)(b)**

Industry	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Food, beverages and tobacco	112.3	116.2	120.5	123.1	125.9	127.2	130.4
Textiles	102.9	101.8	102.2	105.6	106.4	106.8	108.1
Clothing and footwear	114.9	116.1	117.1	118.3	121.5	122.9	125.0
Wood, wood products and furniture	114.2	116.5	122.5	126.1	127.1	128.0	129.3
Paper, paper products and printing	117.3	119.9	122.0	125.2	132.9	135.6	137.5
Chemicals and chemical products	109.9	111.1	110.3	113.6	117.0	116.1	115.5
Petroleum products	134.3	143.9	127.2	120.9	125.0	130.2	120.4
Non-metallic mineral products	119.3	119.3	120.8	124.2	124.6	125.4	126.8
Basic metal products	99.9	100.6	99.8	107.2	109.9	103.7	107.9
Fabricated metal products	114.3	114.7	114.8	116.2	119.2	120.7	122.0
Transport equipment	112.7	116.0	119.1	120.7	122.3	121.9	123.1
Other machinery and equipment	107.0	109.3	109.9	111.2	112.4	113.5	114.3
Miscellaneous manufacturing products	107.8	109.6	112.4	116.2	119.7	120.8	121.0
<b>All Manufacturing Industry Index</b>	<b>111.6</b>	<b>114.3</b>	<b>115.5</b>	<b>118.1</b>	<b>121.1</b>	<b>121.8</b>	<b>123.4</b>

(a) Reference base year 1988–89 = 100.0. (b) For a full description of Division C, Manufacturing and the subdivisions within the Manufacturing Division, see Australian Standard Industrial Classification (ASIC) (1201.0), 1983 edition.

Source: *Price Indexes of Articles Produced by Manufacturing Industry, Australia* (6412.0).

**19.15 EXPENDITURE ON RESEARCH AND DEVELOPMENT, Manufacturing Businesses**

	1996-97				
	1995-96	Type of expenditure			
		Capital expenditure	Labour costs(a)	Other current expenditure	Total
Industry subdivision	\$m	\$m	\$m	\$m	\$m
Food, beverage and tobacco manufacturing	292.6	23.5	75.8	128.0	227.3
Textile, clothing, footwear and leather manufacturing	2.1	10.5	10.4	9.1	21.7
Wood and paper product manufacturing	182.1	n.p.	n.p.	91.4	190.0
Printing, publishing and recorded media	20.3	2.2	9.5	5.5	17.2
Petroleum, coal, chemical and associated product manufacturing	348.0	27.8	135.4	157.5	320.8
Non-metallic mineral product manufacturing	80.3	5.1	24.7	37.3	67.2
Metal product manufacturing	335.0	91.4	109.6	170.0	371.0
Motor vehicle and part and other transport equipment manufacturing	408.9	30.5	154.4	212.3	397.3
Photographic and scientific equipment manufacturing	134.0	6.6	41.6	31.5	79.6
Electronic and electrical equipment and appliance manufacturing	480.3	34.5	267.6	285.0	587.1
Industrial machinery and equipment manufacturing	107.0	12.0	64.7	60.5	137.2
Other manufacturing	20.5	n.p.	n.p.	6.1	18.0
<b>Total manufacturing</b>	<b>2 429.9</b>	<b>316.1</b>	<b>924.1</b>	<b>1 194.2</b>	<b>2 434.4</b>

(a) Includes wages and salaries, payroll tax, payments to contract staff on the payroll, fringe benefits tax and workers' compensation, holiday pay, long service leave payments, sick pay, and employer contributions to superannuation and pension schemes.

Source: *Research and Experimental Development, Business Enterprises, Australia (8104.0)*.

## Research and experimental development

Research and experimental development (R&D) activity, in the business context, is defined as systematic investigation or experimentation involving innovation or technical risk, the outcome of which is new knowledge, with or without a specific practical application or new or improved products, processes, materials, devices or services. R&D activity also extends to modifications to existing products/processes.

As table 19.15 shows, between 1995-96 and 1996-97 there was a slight increase in the R&D expenditure within the manufacturing industry, up 0.2% from \$2,429.9m to \$2,434.4m. Of those industries which increased their R&D expenditure, the three largest rises were in Industrial machinery and equipment manufacturing (28.2%), Electronic and electrical equipment and appliance manufacturing (22.2%)

and Metal product manufacturing (10.7%). The three largest falls were in Photographic and scientific equipment manufacturing (-40.6%), Food, beverage and tobacco manufacturing (-22.3%) and Non-metallic mineral product manufacturing (-16.3%).

Businesses in the Electronic and electrical equipment and appliance industry increased their share of R&D expenditure from 20% in 1995-96 to 24% in 1996-97.

## Direct exports by manufacturers

Table 19.16 shows the proportions of manufacturing employment and turnover accounted for by manufacturing establishments, classified by the extent to which they directly engage in exporting activity. It also shows the value of those direct exports as a percentage of total sales of goods produced.

**19.16 MANUFACTURING ESTABLISHMENTS, Summary of Operations by  
Proportion of Exports—1996–97**

Industry subdivision	Establishments that do not export		Establishments with exports				
			Up to and including 50% of sales of goods produced		Of more than 50% of sales of goods produced		Exports as % of sales of goods produced
	Employment at end of June(a)	Turnover	Employment at end of June(a)	Turnover	Employment at end of June(a)	Turnover	
	%	%	%	%	%	%	%
Food, beverage and tobacco manufacturing	46.7	37.8	38.4	45.9	14.9	16.4	18.0
Textile, clothing, footwear and leather manufacturing	60.6	48.2	33.8	40.4	5.6	11.4	13.7
Wood and paper product manufacturing	73.0	60.9	26.1	36.0	0.9	3.0	6.4
Printing, publishing and recorded media	81.2	74.7	18.5	23.1	0.3	2.2	4.0
Petroleum, coal, chemical and associated product manufacturing	40.6	29.1	57.8	68.8	1.7	2.1	9.5
Non-metallic mineral product manufacturing	66.3	68.7	32.4	29.9	1.3	1.4	3.6
Metal product manufacturing	60.1	38.1	34.4	42.6	5.5	19.2	24.6
Machinery and equipment manufacturing	45.3	32.2	47.6	59.4	7.1	8.5	16.6
Other manufacturing	81.0	76.1	18.0	22.7	0.9	1.2	2.9
<b>Total manufacturing</b>	<b>57.2</b>	<b>42.2</b>	<b>37.0</b>	<b>47.8</b>	<b>5.8</b>	<b>10.0</b>	<b>14.9</b>

(a) Includes working proprietors.

Source: *Manufacturing Industry, Australia* (8221.0).

Generally, exporting establishments have higher turnover per person employed than non-exporting establishments. In 1996–97, establishments which undertook some exporting had 43% of manufacturing employment, but contributed almost 58% of manufacturing turnover. Industries where exporting establishments contributed the most to industry turnover were Petroleum, coal, chemical and associated product manufacturing (71% of industry turnover) and Machinery and equipment manufacturing (68%). Industries where exporting establishments contributed least to industry turnover were Other manufacturing (24%) and Printing, publishing and recorded media (25%). On average, exporting establishments showed higher wages and salaries per person employed than non-exporting establishments.

Overall, manufacturers directly exported almost 15% of the goods they produced in 1996–97. Industries with the highest levels of direct exporting were Metal product manufacturing (25%) and Food, beverage and tobacco manufacturing (18%). Industries which exported less than 5% of the goods they produced were Printing, publishing and recorded media (4%), Non-metallic mineral product manufacturing (3.6%) and Other manufacturing (2.9%).

Businesses which employed 100 or more persons had the highest proportion of exports in their sales (16.6%), followed by businesses which employed 0–49 people (12.2%) and business employing 50–99 people (11.7%).

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## Introduction

The construction industry has a major influence on every Australian. It provides the homes in which we live, the places in which most of us work and play, our schools and hospitals, and the infrastructure such as roads, water and electricity supply, and telecommunications, essential for our day to day living. A number of other parts of the Australian economy are also closely linked to the construction industry and its activities. These include in particular, parts of the manufacturing, wholesale and retail trade and finance industries, in supplying components, fittings and furnishings, and in financing construction. Parts of the professional services industry—such as the architectural and engineering professions—are also closely linked to the construction industry.

The construction industry engages in three broad areas of activity: residential building (houses, flats, etc.), non-residential building (offices, shops, hotels, etc.), and engineering construction (roads, bridges, water and sewerage, etc.). Construction activity is undertaken by both the private and public sectors in Australia. The private sector is engaged in all three categories of construction, and plays the major role in residential and other building activity. The public sector plays a key role in initiating and undertaking engineering construction activity, and building activity relating to health and education.

In 1997–98, the construction industry contributed about 6.7% to the gross product of all industries, as measured by production-based Gross Domestic Product (at average 1989–90 prices). It employed 597,000 people, either as employees or as self employed contractors. This represented 7% of the employment in all industries.

## Trends in the construction industry

Trends over recent years in the level of activity of the construction industry as a whole are shown in table 20.1. This illustrates that, in 1997–98, residential construction accounted for 38% of the activity, with engineering works accounting for a further third, and non-residential construction accounting for the remaining 29%. These were similar to the proportions in 1996–97, although the growth in activity from 1996–97 to 1997–98 was most marked in residential building (19%).

The table also illustrates how the pattern of building activity changes over time. The pattern was very different in 1993–94. In that year, residential building had accounted for 45% of total construction activity, non-residential building had contributed just over a quarter of activity (24%) and engineering construction had accounted for the remaining 31%. By 1997–98, the proportion of total construction activity occurring in residential building declined, replaced progressively by growth in the proportion of total activity coming from non-residential building and engineering construction.

**20.1 CONSTRUCTION ACTIVITY, By Type of Activity, At Average 1989–90 Prices**

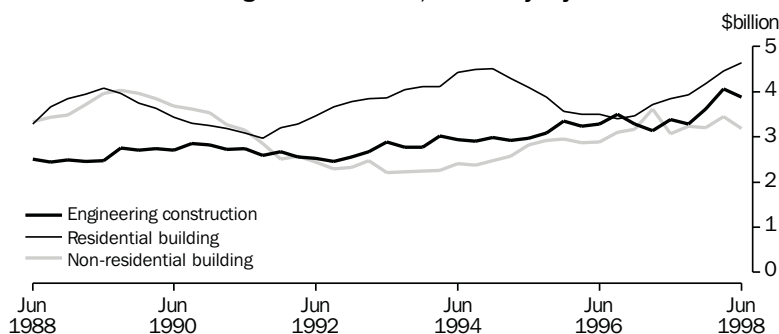
	Residential building	Non-residential building	Engineering construction	Total construction
Financial year	\$m	\$m	\$m	\$m
1991–92	12 911	10 386	10 338	33 634
1992–93	15 148	9 285	10 626	35 058
1993–94	16 676	9 112	11 509	37 295
1994–95	17 402	10 215	11 791	39 409
1995–96	14 458	11 616	12 921	38 996
1996–97	14 391	12 894	13 309	40 594
1997–98	17 156	13 035	14 832	45 023

Source: *Building Activity, Australia* (8752.0); *Engineering Construction Activity, Australia* (8762.0).

Graph 20.2 shows the data from table 20.1 in a longer time series on a quarterly basis. It shows the decline in the value of residential construction from about the end of 1994, followed by a steady recovery from about mid 1996, while the engineering construction and non-residential building series turned down in the June quarter 1998.

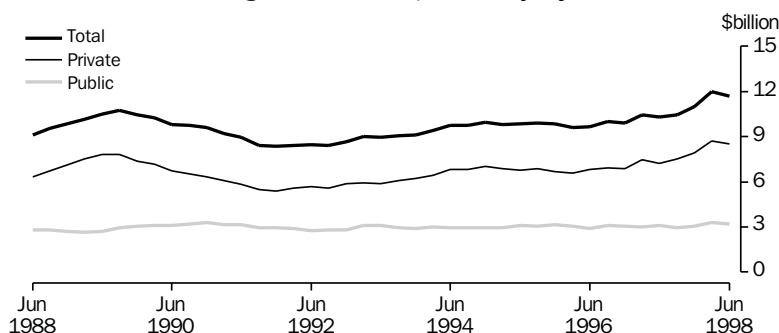
Graph 20.3 shows that construction activity for the public sector has remained relatively constant at around \$3b each quarter over the last ten years. The volatility evident in total construction series is mainly due to private sector construction activity, the growth in total construction activity from June quarter 1997 until March quarter 1998 being driven by the growth in private sector activity.

**20.2 QUARTERLY CONSTRUCTION ACTIVITY, By Type of Activity,  
At Average 1989-90 Prices, Seasonally Adjusted**



Source: *Building Activity, Australia* (8752.0); *Engineering Construction Activity, Australia* (8762.0).

**20.3 QUARTERLY CONSTRUCTION ACTIVITY, By Public/Private Sector,  
At Average 1989-90 Prices, Seasonally Adjusted**



Source: *Building Activity, Australia* (8752.0); *Engineering Construction Activity, Australia* (8762.0).

## Residential building

Residential building involves the construction of dwelling units, which comprise new houses, new other residential buildings (flats, apartments, villa units, townhouses, duplexes, etc.), and dwellings created as part of alterations and additions to existing buildings (including conversions to dwelling units) and as part of the construction of non-residential buildings.

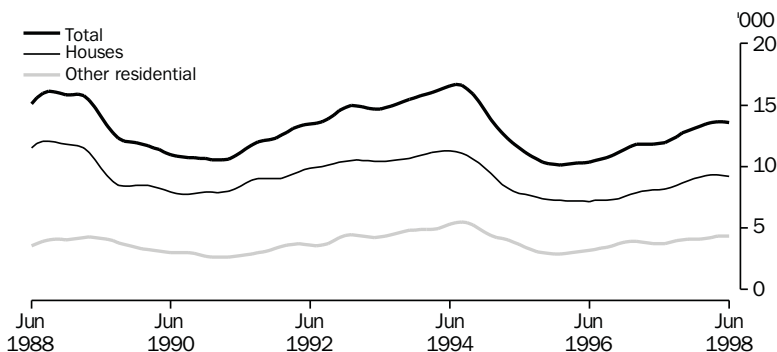
The trend in total dwelling unit approvals grew for three and half years from February 1991, peaking in July 1994 (graph 20.4). The trend then declined to December 1995, to a level almost 40% below the July 1994 peak. The trend for dwelling units approved was relatively flat between December 1995 and June 1996. Since then, it has grown steadily apart from a flat period from February to June 1997 and since

March 1998. The number of dwelling units approved in June 1998 was 18% higher than in June 1997.

## New houses

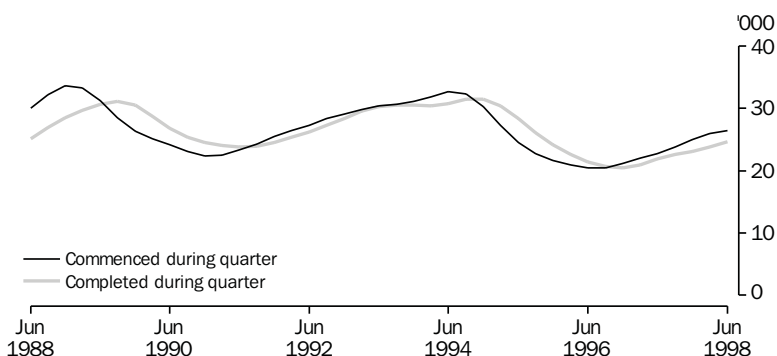
Graph 20.5 illustrates the cyclical pattern of new house commencements. Lows were recorded in 1990–91 and 1996–97, with peaks in 1988–89 and 1993–94. New house construction grew throughout 1992–93 and 1993–94, the number of commencements peaking in the June quarter 1994. New house commencements fell in each quarter of 1994–95 and 1995–96, but grew in each quarter of 1996–97. There was continued growth in the trend to June 1998 for new house commencements, although the rate of growth in the trend eased in the first half of 1998. House completions generally follow a similar pattern to commencements.

**20.4 NUMBER OF DWELLING UNITS APPROVED, Trend Estimates**



Source: *Building Approvals, Australia* (8731.0).

**20.5 NUMBER OF NEW HOUSES CONSTRUCTED, Trend Estimates**



Source: *Building Activity, Australia* (8752.0).

The trend in new house commencements, which has been growing for the last two years, is reflected in table 20.6, which shows that, in 1997–98, for both new house approvals and new other residential construction, the number of approvals was higher than the number of commencements, and commencements were higher than completions. At other points in the building cycle, the number of approvals and commencements can fall behind completions.

**20.6 RESIDENTIAL BUILDING, By Public/Private Sector—1997–98**

	New houses	New other residential dwelling units	Conversions, etc.
	no.	no.	no.
Private sector			
Approved	104 474	42 593	3 865
Commenced	98 696	39 802	3 759
Completed	92 499	33 999	3 345
Public sector			
Approved	2 517	2 963	49
Commenced	1 921	2 894	59
Completed	1 765	2 676	188
Total			
Approved	106 991	45 556	3 914
Commenced	100 617	42 696	3 818
Completed	94 264	36 675	3 533

Source: *Building Approvals, Australia* (8731.0); *Building Activity, Australia* (8752.0).

In 1997–98, approvals and commencements of new houses accounted for 70% of the number of approved and commenced new residential dwelling units (i.e. excluding approvals for conversions). Completed houses represented 72% of all new residential dwelling units completed.

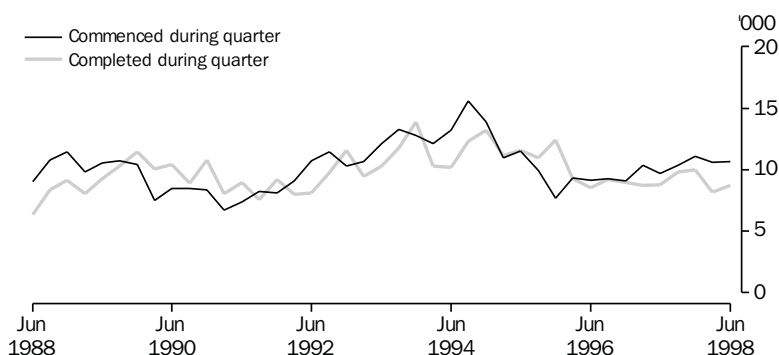
The table also shows that residential building activity is dominated by the private sector. In 1997–98, this sector accounted for 98% of approvals, commencements and completions of new houses, the public sector being responsible for the remainder. The public sector was a little more significant in 'new other residential' building work, accounting for 7% of approvals, commencements and completions.

### New other residential building

Other residential building refers to structures built for accommodation purposes other than houses. This includes buildings such as blocks of flats, home units, attached townhouses, villa units, terrace houses, semi-detached houses and maisonettes. The level of activity for this type of building is highly variable and does not follow the regular pattern experienced in house construction. This is because of the generally larger size of other residential building construction jobs and the varying extent of speculative building of private townhouses, flats, home units and similar residential building projects over time.

Whereas table 20.6 presents the number of new other residential dwelling units approved, commenced and completed in 1997–98, graph 20.7 shows a ten year time series of commencements and completions of these types of buildings ending with the 1997–98 data. Despite quarter to quarter volatility, it can be seen that the completions series generally has lagged the commencements series by one to two quarters, with the series at June 1998 indicating completions at a significantly lower level than commencements.

## 20.7 NUMBER OF NEW OTHER RESIDENTIAL UNITS CONSTRUCTED



Source: *Building Activity, Australia* (8752.0).

The number of new other residential dwelling units commenced in the June quarter 1998 was 10.5% greater than in the June quarter 1997 and 16.6% greater than in the June quarter 1996.

On the other hand, the number of other residential dwelling units completed in the June quarter 1998 was 0.6% lower than in the June quarter 1997 and 2.2% higher than in the June quarter 1996.

### Other dwellings

Apart from the construction of new residential buildings, dwellings can be created as part of alterations and additions to existing buildings (including conversions to dwelling units) and as part of the construction of non-residential buildings.

Table 20.6 shows that 3,914 such dwelling units were approved in 1997–98, an increase of 7% from the 3,675 units approved in 1996–97. There were 3,818 units commenced (an increase of 7% from 1996–97) and 3,533 units completed in 1997–98 (an increase of 44%).

### Value of residential building

As table 20.8 shows, total approvals for new residential building were valued at \$16,544m in 1997–98, and value of work done slightly lower at \$15,686m. New house approvals accounted for 72% of the value of new residential building approved, and new other residential building accounted for 28%.

### 20.8 VALUE OF RESIDENTIAL BUILDING—1997–98

	Approved	Work done
	\$m	\$m
New residential buildings		
New houses	11 904	11 176
New other residential buildings	4 640	4 510
Total new residential buildings	16 544	15 686
Alterations and additions to residential buildings(a)	3 004	3 000

(a) Valued at \$10,000 or more.

Source: *Building Approvals, Australia* (8731.0); *Building Activity, Australia* (8752.0).

### Non-residential building

As table 20.9 shows, the total value of non-residential building work approved in 1997–98 was 13% higher than in 1996–97, with the value of work done in 1997–98 being 4% higher. Whereas in 1996–97 the value of work done was very similar to the value of approvals, in 1997–98 the value of non-residential building work approved was 9% higher than the value of work done.

Shops, offices and other business premises accounted for 46% of the value of non-residential building approved and 48% of the work done in 1997–98—these were similar to the proportions in 1996–97.

## 20.9 VALUE OF NON-RESIDENTIAL BUILDING

	1996-97		1997-98	
	Approved	Work done	Approved	Work done
	\$m	\$m	\$m	\$m
Hotels, etc.	913	1 003	1 336	1 054
Shops	2 180	2 126	2 025	2 288
Factories	1 133	1 241	993	1 012
Offices	2 293	1 878	2 507	2 123
Other business premises	1 628	1 789	2 122	1 974
Educational	1 407	1 374	1 369	1 380
Religious	56	78	80	89
Health	982	906	1 774	1 280
Entertainment and recreational	1 321	1 603	1 496	1 369
Miscellaneous	817	762	744	692
<b>Total non-residential building(a)</b>	<b>12 730</b>	<b>12 755</b>	<b>14 446</b>	<b>13 259</b>

(a) Valued at \$50,000 or more.

Source: *Building Approvals, Australia (8731.0)*; *Building Activity, Australia (8752.0)*.

## Building activity at constant prices

Estimates at average 1989-90 prices of the value of residential and non-residential building work done are presented in table 20.10. Constant price estimates measure changes in value after the direct effects of price changes have been eliminated.

At average 1989-90 prices, the value of building work done rose by \$2,906m (11%) to \$30,191m in 1997-98, following a rise of 5% in 1996-97. Most (83%) of the \$2,906m increase was from the higher value of residential building work done, which increased by 20% on the value in 1996-97.

## Engineering construction

This section contains estimates of engineering construction activity in Australia for both public and private sector organisations. These estimates, together with the preceding data on residential and non-residential building, complete the picture of construction activity in Australia.

The total value of engineering construction work in 1997-98 (\$17,102m) was 13% higher than in 1996-97 (table 20.11). The increase of \$1,937m was due almost entirely to the increase in work done for the private sector (by \$1,561m). The value of the work done for the public sector in 1997-98 accounted for 58% of the value of all work done, down from 63% in 1996-97.

## 20.10 VALUE OF BUILDING WORK DONE, At Average 1989-90 Prices

	New residential building			Alterations and additions to residential buildings	Non-residential building	Total building
	Houses	Other residential buildings	Total			
	\$m	\$m	\$m	\$m	\$m	\$m
1992-93	9 815	3 273	13 088	2 060	9 285	24 434
1993-94	10 652	3 844	14 496	2 180	9 112	25 788
1994-95	10 520	4 508	15 028	2 375	10 216	27 619
1995-96	8 392	3 776	12 168	2 290	11 616	26 074
1996-97	8 307	3 795	12 102	2 289	12 894	27 285
1997-98	10 005	4 527	14 532	2 624	13 035	30 191

Source: *Building Activity, Australia (8752.0)*.

**20.11 VALUE OF ENGINEERING CONSTRUCTION WORK DONE,  
Public/Private Sector and Nature of Project**

	1996–97			1997–98		
	For the private sector	For the public sector	Total	For the private sector	For the public sector	Total
	\$m	\$m	\$m	\$m	\$m	\$m
Roads, highways and sub-divisions	1 466	3 060	4 523	1 772	3 592	5 364
Bridges	34	202	236	23	247	270
Railways	80	1 239	1 319	168	961	1 129
Harbours	80	173	253	201	112	313
Water storage and supply	121	310	431	138	321	459
Sewerage and drainage	75	410	485	100	523	623
Electricity generation, transmission and distribution	411	1 089	1 500	563	1 018	1 581
Pipelines	238	101	339	287	67	354
Recreation	581	195	776	623	219	842
Telecommunications	166	2 617	2 783	65	2 731	2 796
Heavy industry	2 344	128	2 472	3 205	104	3 310
Other	35	12	47	46	16	62
<b>Total</b>	<b>5 630</b>	<b>9 535</b>	<b>15 165</b>	<b>7 191</b>	<b>9 911</b>	<b>17 102</b>

Source: *Engineering Construction Activity, Australia* (8762.0).

In 1997–98, two-thirds (67%) of the value of all engineering work done related to Roads, highways and sub-divisions, Heavy industry and Telecommunications. In 1996–97, these projects accounted for 67% of the value of all work done.

## Price indexes of materials used in building

Two price indexes measure the changes in prices of selected materials used in the construction of buildings. These are described below.

## Price index of materials used in house building

The all groups index (a weighted average of the six State capital cities) rose by 2.1 index points in 1997–98. Table 20.12 shows that there were rises in all capital cities, the largest in Sydney (3.4 index points) and Adelaide (2.7 index points).

## 20.12 PRICE INDEX OF MATERIALS USED IN HOUSE BUILDING, Six State Capital Cities(a)(b)

Financial year	Weighted average of six State capital cities	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
1992–93	106.9	106.8	105.7	110.2	106.3	106.9	109.9
1993–94	112.0	111.3	112.1	113.5	117.1	109.1	112.8
1994–95	115.4	115.0	115.9	115.9	118.8	112.7	117.3
1995–96	115.7	115.9	115.4	115.1	118.2	114.8	120.7
1996–97	116.1	116.3	115.3	115.3	120.6	115.3	120.1
1997–98	118.2	119.7	117.1	117.1	123.3	115.9	121.0

(a) Reference base year 1989–90 = 100.0. (b) The separate city indexes measure price movement within each city individually. They do not compare price levels between cities.

Source: *Price Index of Materials Used in House Building, Six State Capital Cities* (6408.0).

## Price index of materials used in building other than house building

The index for materials used in building other than house building rose in 1997–98 by one index point (table 20.13). This increase in the average reflected rises in all capital cities except Perth, which showed no change over the 1996–97 level.

Table 20.14 presents the composition of the index in terms of the materials used. This shows that the rise in the index reflected increases between 1996–97 and 1997–98 in all materials components of the index, although higher increases occurred in structural timber (an increase of 5.3 index points), clay bricks (5.9 index points) and non-ferrous pipes and fittings (6.8 index points).

**20.13 PRICE INDEX OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING, Six State Capital Cities(a)(b)**

Financial year	Weighted average of six State capital cities	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
1992–93	106.0	106.5	104.4	108.9	105.1	105.7	108.2
1993–94	107.5	107.0	106.7	110.1	107.9	107.1	110.1
1994–95	110.4	110.3	108.9	112.9	110.9	110.1	112.2
1995–96	112.7	112.5	111.1	115.0	112.7	113.2	115.1
1996–97	113.2	113.0	110.9	115.9	114.1	114.6	116.3
1997–98	114.2	114.4	111.4	117.2	115.1	114.6	117.4

(a) Reference base year 1989–90 = 100.0. (b) The separate city indexes measure price movements within each city individually. They do not compare price levels between cities.

Source: *Price Index of Materials Used in Building Other than House Building, Six State Capital Cities (6407.0)*.

**20.14 PRICE INDEX OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING(a)**

Material	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Structural timber	107.1	127.1	128.3	120.5	116.4	121.7
Clay bricks	106.2	107.8	111.0	110.0	108.7	114.6
Ready mixed concrete	103.5	106.7	112.4	108.2	106.6	107.2
Steel decking cladding and sheet products	108.4	107.5	108.9	110.9	112.9	114.9
Structural steel	101.2	104.3	105.3	109.3	112.5	113.1
Reinforcing steel bar fabric and mesh	109.2	112.7	111.5	112.0	111.6	112.7
Aluminium windows	99.1	99.7	105.4	108.4	108.5	109.0
Non-ferrous pipes and fittings	104.6	102.4	118.1	129.4	128.8	135.6
Builders' hardware	112.6	115.3	116.6	119.5	118.3	120.0
Paint and other coatings	118.2	119.9	123.3	129.1	135.6	136.0
<b>All groups</b>	<b>106.0</b>	<b>107.5</b>	<b>110.4</b>	<b>112.7</b>	<b>113.2</b>	<b>114.2</b>

(a) Reference base year 1989–90 = 100.0.

Source: *Price Index of Materials Used in Building Other Than House Building, Six State Capital Cities (6407.0)*.



**20.15 AVERAGE WEEKLY EARNINGS, Construction and All Industries**

	Construction		All industries	
	Full-time adult employees	All employees	Full-time adult employees	All employees
	\$	\$	\$	\$
May 1993	646	633	579	518
May 1994	709	656	635	532
May 1995	730	688	662	548
May 1996	751	715	681	564
May 1997	792	737	718	578
May 1998	808	768	739	596

Source: *Average Weekly Earnings* (6302.0).

## Average weekly earnings in the construction industry

Average weekly earnings provide useful information on the cost of labour in the construction industry. This complements the information provided in the previous section on the cost of materials in the industry.

Average weekly earnings have increased steadily in the construction industry, and in all industries combined, in recent years. In the 12 months to May 1998, a 4% increase was recorded in the construction industry for all employees, in contrast to a 3% increase across all industries combined, for all employees (table 20.15). These were slightly higher increases than in the 12 months to May 1997, when a 2% increase was recorded across all industries for all employees and a 3% increase for all construction employees.

This table also shows that average weekly earnings for all employees in the construction industry are 29% higher than for all employees across all industries, although average weekly earnings for full-time employees are only 9% above the average for all industries. This reflects the effect of the higher rates for part-time and casual employees in the construction industry.

## Industrial disputes

Of the 447 industrial disputes during 1997, 112 or 25% affected the construction industry (table 20.16). These 112 disputes involved (either directly or indirectly) 50,000 construction industry employees and resulted in the loss of 107,800 working days. This represents 20% of the total number of working days lost due to all industrial disputes in Australia in 1997.

**20.16 INDUSTRIAL DISPUTES DURING 1997, Construction and All Industries**

	Construction	All industries
Total industrial disputes (no.)	112	447
Employees involved (directly and indirectly) ('000)	50.0	315.4
Working days lost ('000)	107.8	534.2

Source: *Industrial Disputes, Australia* (6322.0).

Table 20.17 shows that in 1997 the construction industry recorded an average of 290 working days lost per thousand employees, compared with an average of 75 across all industries. Victoria and Western Australia were most strike affected, with 551 and 524 working days lost per thousand construction industry employees, respectively. Tasmania, the Australian Capital Territory and the Northern Territory reported little or no strike activity in the construction industry.

**20.17 WORKING DAYS LOST DUE TO INDUSTRIAL DISPUTES, Construction and All Industries by State/Territory—1997(a)**

	Construction	All industries
	per '000 employees	per '000 employees
NSW	269	64
Vic.	551	118
Qld	51	71
SA	77	15
WA	524	85
Tas.	—	35
NT	11	7
ACT	7	15
Aust.	290	75

(a) The basis for the calculation of working days lost per thousand employees was changed in January 1995 to use estimates of employees taken from the ABS Labour Force Survey only.

Source: *Industrial Disputes, Australia* (6322.0).

## Trade union membership

Table 20.18 shows the general trend of declining membership of trade unions, both across all industries and within the construction industry. Between 1992 and 1996, the construction industry had a slightly lower proportion of trade union members than in all industries combined. However membership of trade unions among construction employees rose from 30% in 1996 to 34% in 1997—also a higher membership rate than across all industries in that year. This was the first year since 1992 in which the rate of trade union membership in the construction industry exceeded the rate in all industries combined.

In the construction industry, a higher proportion of permanent employees (40%) were trade union members than the proportion of casual employees (19%) (table 20.19). This pattern was the same for both male and female employees in construction, although in that industry a much lower proportion of females than males were trade union members (6% compared with 37%). A much higher proportion (27%) of female employees across all industries were trade union members, than in the construction industry (6%).

**20.18 EMPLOYEES WHO WERE  
TRADE UNION MEMBERS,  
Construction Industry—1992–1996(a)**

	Construction	All industries
NUMBER OF MEMBERS ('000)		
1992	123.9	2 508.8
1993	110.1	2 376.9
1994	113.4	2 283.4
1995	105.1	2 251.8
1996	109.9	2 194.3
1997	115.0	2 110.4
PROPORTION OF EMPLOYEES IN TRADE UNIONS (%)		
1992	42.1	39.6
1993	35.3	37.6
1994	34.1	35.0
1995	30.6	32.7
1996	29.7	31.1
1997	33.5	30.3

(a) At August

Source: *Trade Union Members, Australia* (6325.0).

**20.19 EMPLOYEES WHO WERE  
TRADE UNION MEMBERS,  
Construction Industry—August 1997**

	Construction	All industries
	%	%
MALES		
Permanent	43.2	37.9
Casual	21.6	14.6
<b>Total</b>	<b>37.0</b>	<b>33.0</b>
FEMALES		
Permanent	7.7	33.3
Casual	2.5	13.2
<b>Total</b>	<b>5.5</b>	<b>26.9</b>
TOTAL		
Permanent	39.9	36.0
Casual	18.7	13.8
<b>Total</b>	<b>33.5</b>	<b>30.3</b>

(a) At August

Source: *Trade Union Members, Australia* (6325.0).

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## Introduction

The service industries sector is the most significant and fastest growing component of the Australian economy. This chapter presents an overview of the sector and provides a range of statistical information for a selection of service industries, with a particular focus on those that have recently been surveyed as part of the ABS rotating program of service industries collections.

For the purposes of this chapter, the service industries sector has been defined as all industries other than the goods producing industries (agriculture, mining and manufacturing, electricity, construction, and gas and water supply). In terms of the *Australian and New Zealand Standard Industrial Classification* (ANZSIC), the service industries cover the wholesale and retail trade, accommodation, cafes and restaurants, transport and storage, communication services, finance and insurance, property and business services, government administration and defence, education, health and community services, cultural and recreational services, and personal and other services.

## Overview

The service industries sector is the largest component of the Australian economy in terms of number of businesses, employment and gross product.

Of the estimated 1,046,900 private sector businesses in Australia in 1996–97, some 687,200 or about two-thirds were in the service industries. For small businesses (those with less than 20 employees), the proportions are similar, service industries accounting for 66% of the just over one million small businesses in Australia (table 21.1).

In terms of industry output or gross product, the service industries are dominant, accounting for two-thirds of the gross product of all industries. As shown in table 21.2, the service industries share of output has grown from 64% to 66% in the five year period from 1991–92 to 1996–97. This reflects the 24% increase in gross product (at average 1989–90 prices) over the period for services industries compared to the 16% increase for the goods producing industries over the same period.

The largest contributor to the service industries sector was the wholesale trade industry, which accounted for 17% of the gross output of the sector and 11% of the gross output of all industries. The next largest, within the service industries sector, was property and business services which accounted for 14% of the gross output of the sector.

In the five year period from 1991–92 to 1996–97, service industries output at average 1989–90 prices increased on average by 4.5% per year. In contrast, the gross product of the goods producing industries increased by an annualised rate of just over 3%.

The communication services industry recorded the largest percentage increase in output in the five year period with an increase of 78%, the equivalent of an annual growth rate of over 12%. The next highest growth rate was recorded by the wholesale trade industry with 33% over the five year period, an annual growth rate of nearly 6%. The three areas in the service industries sector where growth was lowest were retail trade (15%), education (14%), and health and community services (14%).

As table 21.3 shows, in terms of employment the service industries sector is even more dominant, accounting for 73% of employment in 1996–97, a small rise from 71% in 1991–92. Total employment in the service industries sector in 1996–97 was 6,098,400 persons.

**21.1 NUMBER OF BUSINESSES—1996–97**

Industry	Unit	Small businesses	Other businesses	Total
Goods producing industries	'000	343.7	16.0	<b>359.7</b>
Service industries	'000	660.5	26.7	<b>687.2</b>
Total all industries	'000	1 004.2	42.7	<b>1 046.9</b>
Businesses in service industries as a percentage of all businesses	%	65.8	62.5	<b>65.6</b>

Source: *Small Business in Australia, 1997* (1321.0).

**21.2 GROSS PRODUCT AT AVERAGE 1989–90 PRICES, By Industry**

	1991–92	1996–97	Increase
	\$m	\$m	%
Goods producing industries			
Agriculture	15 145	18 311	20.9
Mining	16 669	19 374	16.2
Manufacturing	53 937	61 138	13.4
Electricity, gas and water	12 944	14 273	10.3
Construction	22 690	28 177	24.2
Total	121 385	141 273	16.4
Service industries			
Wholesale trade	34 864	46 243	32.6
Retail trade	27 533	31 638	14.9
Accommodation, cafes and restaurants	6 976	8 281	18.7
Transport and storage	20 480	25 487	24.4
Communication services	9 901	17 625	78.0
Finance and insurance	20 892	26 050	24.7
Property and business services	29 622	37 049	25.1
Government administration and defence	13 438	15 467	15.1
Education	16 772	19 181	14.4
Health and community services	20 509	23 465	14.4
Cultural and recreational services	7 707	9 180	19.1
Personal and other services	6 797	8 181	20.4
Total	215 491	267 847	24.3
<b>Total all industries(a)</b>	<b>336 876</b>	<b>409 120</b>	<b>21.4</b>
	%	%	
Service industries as a percentage of all industries	64.0	65.5	

(a) Excludes ownership of dwellings, import duties and imputed bank service charge.

Source: Australian National Accounts: National Income, Expenditure and Product (5206.0).

**21.3 EMPLOYED PERSONS, By Industry**

	1991–92(a)	1996–97(a)	Increase
	'000 persons	'000 persons	%
Goods producing industries			
Agriculture	408.1	427.0	4.6
Mining	89.6	86.7	–3.2
Manufacturing	1 086.0	1 129.8	4.0
Electricity, gas and water	106.2	66.7	–37.2
Construction	517.0	586.8	13.5
Total	2 206.9	2 297.0	4.1
Service industries			
Wholesale trade	489.2	492.5	0.7
Retail trade	1 090.4	1 237.7	13.5
Accommodation, cafes and restaurants	342.1	399.1	16.7
Transport and storage	374.5	396.2	5.8
Communication services	140.1	163.6	16.8
Finance and insurance	334.0	316.8	–5.1
Property and business services	618.5	827.5	33.8
Government administration and defence	349.5	369.1	5.6
Education	531.4	581.9	9.5
Health and community services	693.9	771.6	11.2
Cultural and recreational services	163.7	202.8	23.9
Personal and other services	289.0	339.6	17.5
Total	5 416.3	6 098.4	12.6
<b>Total all industries</b>	<b>7 623.2</b>	<b>8 395.4</b>	<b>10.1</b>
	%	%	
Service industries as a percentage of all industries	71.1	72.6	

(a) Annual average.

Source: Labour Force, Australia (6203.0).



In the 5 year period since 1991–92, employment in service industries has increased by 682,100 persons or 13%, representing an annual growth rate of nearly 2.5%. The goods producing industries recorded an increase in employment of only 90,100 which represents an increase of 4% over the five year period, an annual growth rate of just over 0.75%.

Within the service industries, the major employing industry was the retail trade industry with employment in 1996–97 of 1,237,700 persons, which accounted for 15% of all employment. Other large employing service industries were property and business services (827,500 persons), health and community services (771,600 persons) and wholesale trade (492,500 persons). The industries showing the greatest growth in the five year period since 1991–92 were property and business services, where employment increased 34% from 618,500 persons to 827,500 persons, cultural and recreational services which recorded an increase of 24% in the period, and communication services which increased by 17%. In contrast, employment in finance and insurance declined 5% over the same period, while employment in the wholesale trade industry increased by only 1%.

## Statistics for selected service industries

Presented below are statistics for a selection of service industries. The information provided is sourced primarily from the rotating program of service industries collections conducted by the ABS. The exceptions are the retail trade and wholesale trade industries where information has been sourced from the monthly and quarterly sales collections respectively.

### Retail trade

The retail trade industry comprises businesses primarily engaged in the resale of new or used goods to final consumers for personal or household consumption, or in selected repair activities such as repair of household equipment or motor vehicles.

Retail turnover accounts for a major share (about 40%) of expenditure-based estimates of Gross Domestic Product. It is also an important current economic indicator and a guide to consumer confidence. Turnover estimates by the retailing industry are used to monitor changes in consumer buying patterns.

Table 21.4 presents annual estimates of turnover by retail industry group, at average 1989–90 prices. In real terms, retail turnover showed growth of 3.3% in 1997–98. In 1996–97 there was virtually no growth while in 1995–96 growth of 3.9% was recorded. Increases were recorded during 1997–98 by each of the industry groups, ranging from 8.7% for the Other retailing group to 0.2% for the Household good retailing group.

**21.4 RETAIL TURNOVER AT AVERAGE 1989–90 PRICES, By Industry**

Year	Food retailing \$m	Department stores \$m	Clothing and softgood retailing \$m	Household good retailing \$m	Recreational good retailing \$m	Other retailing \$m	Hospitality and selected other services \$m	Total \$m
1987–88	32 488	9 798	7 626	10 705	4 567	6 535	15 703	<b>87 422</b>
1988–89	32 670	9 771	7 809	11 228	4 718	7 324	15 993	<b>89 512</b>
1989–90	33 860	9 826	7 560	11 484	5 068	7 891	16 618	<b>92 308</b>
1990–91	34 617	9 461	7 513	11 085	4 867	7 986	16 291	<b>91 819</b>
1991–92	36 113	9 796	7 851	11 447	4 975	8 423	15 721	<b>94 326</b>
1992–93	36 409	9 945	7 610	12 203	4 845	8 546	15 375	<b>94 933</b>
1993–94	36 867	10 023	7 666	13 095	5 100	9 323	16 137	<b>98 210</b>
1994–95	38 811	10 330	7 873	13 829	5 479	9 870	17 543	<b>103 736</b>
1995–96	40 647	10 607	8 003	14 429	5 879	10 300	17 894	<b>107 760</b>
1996–97	40 902	10 536	7 864	15 210	5 687	10 661	16 981	<b>107 841</b>
1997–98	42 353	10 864	8 081	15 239	5 888	11 590	17 381	<b>111 395</b>

Source: Retail Trade, Australia (8501.0).

The Food retailing industry group constitutes the largest component of retail trade, accounting for 37.2% of total retail turnover in 1987–88, and 38.0% in 1997–98. The 30.4% growth in the food retailing industry over the past decade was slightly stronger than the overall growth in retailing of 27.4%. Over the decade, growth has been strongest in the Other retailing industry group (77.3%) and Household good retailing group (42.4%). The slowest growth over this period was in Clothing and soft good retailing industry (6.0%).

A comparison of the share of total retailing held by each of the industry groups shows that the Food, Household good and Other retailing groups have increased their shares over the last ten years. Over the same period, industries to show a decrease in their shares were Department stores, the Clothing and softgood retailing, and the Hospitality and selected other services groups. The Recreational good retailing group's share has remained unchanged.

### Wholesale trade

The wholesale trade industry covers those businesses involved in the resale of new or used goods to businesses or to institutional (including government) users.

As with the retail trade industry, the wholesale trade industry is a significant component of the Australian economy and provides a key indicator of economic activity. Table 21.5 presents annual estimates of wholesale sales (at average 1989–90 prices) since 1989–90. The table shows that in 1997–98 wholesale sales recorded an increase of 6.2% on 1996–97 sales. This followed increases of 2.4% in 1996–97, 2.5% in 1995–96 and 14.1% in 1994–95. During the downturn in the economy in 1990–91 and 1991–92, wholesale sales declined by 5.3% in both years, and sales did not exceed those recorded in 1989–90 until 1994–95.

**21.5 WHOLESALE SALES AT AVERAGE  
1989–90 PRICES**

	\$m	Increase
		%
1989–90	139 187	. .
1990–91	131 841	–5.3
1991–92	124 877	–5.3
1992–93	125 931	0.8
1993–94	135 094	7.3
1994–95	154 203	14.1
1995–96	158 053	2.5
1996–97	161 814	2.4
1997–98	171 804	6.2

Source: *Stocks and Sales, Selected Industries, Australia* (5629.0).

### Accommodation

The accommodation industry, an important part of the tourism and hospitality sector, consists of hotels, motels, caravan parks and similar businesses mainly engaged in providing short term accommodation. It excludes those hotels which provide short term accommodation, but whose main activity is the selling of alcoholic beverages for consumption on the premises.

At 30 June 1996, there were 5,288 businesses in the accommodation industry. This represented a 23% increase over the number of businesses in the industry at June 1992. These businesses employed a total of 81,086 persons at 30 June 1996, an increase of 9% since 1992. The rise in employment was most marked in full-time employment, which increased 14% in the period while part-time employment increased by only 3%.

As table 21.6 shows, the total income of the industry in 1995–96 was \$5,259m, with takings from accommodation representing the majority (62%) of this total, while sales of meals and alcohol accounted for 26% of income. In 1991–92 takings from accommodation and sales of meals and alcohol accounted for 59% and 29% of total income respectively. The significant increase in takings from accommodation resulted in an operating profit before tax for the industry of \$401m, which equated to an operating profit margin of 7.6%, compared with an 8.0% loss in 1991–92.

## 21.6 ACCOMMODATION INDUSTRY

	1991–92	1995–96	Increase
	no.	no.	%
Businesses	4 314	5 288	22.6
	persons	persons	%
Employment			
Full-time	43 766	49 852	13.9
Part-time	30 370	31 234	2.8
Total employment	74 136	81 086	9.4
	\$m	\$m	%
Income			
Takings from accommodation	2 336.5	3 252.8	39.2
Sales of meals and alcohol	1 144.8	1 360.4	18.8
Other income	500.4	646.0	29.1
Total income	3 981.7	5 259.2	32.1
Operating profit before tax	–319.2	400.8	..
	%	%	
Operating profit margin	–8.4	7.8	..

Source: Accommodation Industry, Australia 1995–96 (8695.0).

### Clubs, pubs, taverns and bars

As with the accommodation industry, the clubs, pubs, taverns and bars industries are important parts of the tourism and hospitality sector. The clubs industry covers businesses which mainly provide hospitality services to members on the premises, while pubs, taverns and bars cover businesses which mainly sell alcoholic beverages for consumption on the premises. In 1994–95 there were 7,609 businesses in these two industries combined (table 21.7).

Employment in the clubs, pubs, taverns and bars industries was 133,973 at the end of June 1995 (table 21.7). This was almost unchanged from employment in the industries at end June 1992.

Total income of the two industries in 1994–95 was \$11,120m, an increase of 14% on 1991–92, with the total income of the clubs industry increasing by 24%, whereas the total income of the pubs,

taverns and bars industry increased only 8%. While sales of meals and alcohol increased only slightly (1.3%) in the period, takings from gambling increased by 81% and in 1994–95 accounted for 26% of total income of the two industries. For the clubs industry, takings from gambling now represent the major source of income, with 50% of income being generated from this source. Similarly in the pubs, taverns and bars industry the takings from gambling have grown markedly as a source of income, from 3% of total income in 1991–92 to 9% in 1994–95.

After deduction of expenses, the industries recorded an operating profit before tax of \$687m in 1994–95. This represented an operating profit margin of 6.2%, with clubs recording 9.2% and pubs, taverns and bars recording 4.1%. These compare with 1991–92 operating profit margins of 2.9%, 4.8% and 1.7% respectively.

## 21.7 CLUBS (HOSPITALITY) AND PUBS, TAVERNS AND BARS INDUSTRIES

	1991-92	1994-95	Increase
CLUBS (HOSPITALITY)			
Businesses	no. 3 811	no. 3 284	% -13.8
Employment	persons 60 424	persons 62 536	% 3.5
Income	\$m	\$m	%
Sales of meals and alcohol	1 710.2	1 729.8	1.1
Takings from gambling	1 441.9	2 355.3	63.3
<i>Total income</i>	3 810.5	4 729.4	24.1
Operating profit before tax	178.2	429.1	140.8
Operating profit margin	% 4.8	% 9.2	..
PUBS, TAVERNS AND BARS			
Businesses	no. 4 347	no. 4 325	% -0.5
Employment	persons 73 526	persons 71 437	% -2.8
Income	\$m	\$m	%
Sales of meals and alcohol	5 209.6	5 278.2	1.3
Takings from gambling	181.8	576.1	216.9
<i>Total income</i>	5 911.6	6 390.1	8.1
Operating profit before tax	97.9	258.2	163.7
Operating profit margin	% 1.7	% 4.1	..
CLUBS (HOSPITALITY) AND PUBS, TAVERNS AND BARS			
Businesses	no. 8 158	no. 7 609	% -6.7
Employment	persons 133 950	persons 133 973	% 0.0
Income	\$m	\$m	%
Sales of meals and alcohol	6 919.8	7 008.0	1.3
Takings from gambling	1 623.7	2 931.4	80.5
<i>Total income</i>	9 722.1	11 119.5	14.4
Operating profit before tax	276.1	687.3	148.9
Operating profit margin	% 2.9	% 6.2	..

Source: Clubs, Pubs, Taverns and Bars, Australia, 1994-95 (8687.0).

**21.8 GAMBLING SERVICES INDUSTRIES—1994–95**

	Unit	Lotteries	Casinos	Gambling services n.e.c.	Total
Businesses at 30 June 1995	no.	178	14	1 849	<b>2 041</b>
Employment at 30 June 1995					
Full-time	persons	1 313	11 005	3 369	<b>15 687</b>
Part-time	persons	693	4 832	10 850	<b>16 375</b>
Total employment	persons	2 006	15 837	14 219	<b>32 062</b>
Income					
Gambling takings(a)	\$m	3 977.4	1 381.8	9 541.9	<b>14 901.1</b>
Other income	\$m	157.0	268.7	184.4	<b>610.0</b>
Total income	\$m	4 134.4	1 650.5	9 726.3	<b>15 511.1</b>
Expenses					
Payouts and prizes	\$m	2 094.5	..	7 883.0	<b>9 977.5</b>
Labour costs	\$m	50.4	441.9	162.2	<b>654.5</b>
Other expenses	\$m	1 198.6	1 103.9	1 290.3	<b>3 592.8</b>
Total expenses	\$m	3 343.5	1 545.8	9 335.5	<b>14 224.8</b>
Operating profit before tax	\$m	793.2	107.4	390.6	<b>1 291.2</b>
Operating profit margin	%	19.4	6.5	4.0	<b>8.4</b>

(a) Gambling takings for casinos are on a net basis and hence there are no data for payouts and prizes.

Source: *Gambling Industries, Australia, 1994–95* (8684.0).

## Gambling services

The first ABS survey of the gambling services industries was conducted in respect of the 1994–95 financial year. The industries include businesses mainly engaged in lotteries and lotto operations, casino operations and other gambling services such as totalisator and bookmaker operations. However, the industries do not include the gambling services provided by clubs, pubs, taverns and bars, which accounted for about 35% of net takings from gambling in 1994–95.

As table 21.8 shows, the 2,041 businesses in the gambling services industries in 1994–95 had employment of 32,062 persons at the end of June 1995, almost equally split between full-time and part-time. Total income of the industry was \$15,511m, primarily takings from gambling, which resulted in an operating profit before tax of \$1,291m, after expenses of \$14,225m including \$9,978m in payouts and prizes and other expenses of \$3,593m, including \$1,695m in gambling taxes, levies and other gambling related payments to government bodies. This profit represented an operating profit margin of 8.4%. The lotteries industry recorded the highest operating profit margin with 19.4%, while casinos recorded a profit margin of 6.5%.

## Real estate agents

The real estate agents industry covers businesses mainly engaged in valuing, purchasing, selling (by auction or private treaty), managing or renting real estate on behalf of other people. The most recent survey of the industry was in respect of 1995–96.

There were 8,082 businesses in the real estate agents industry at 30 June 1996 (table 21.9). This represented an increase of 11% in the three year period since June 1993.

**21.9 REAL ESTATE AGENTS INDUSTRY**

	1992–93	1995–96	Increase
	no.	no.	%
Businesses	7 265	8 082	11.2
	persons	persons	%
Employment			
Full-time	34 340	38 898	13.3
Part-time	6 604	7 057	6.9
Total employment	40 945	45 956	12.2
Staff working solely on commission	10 978	9 830	–10.5
	\$m	\$m	%
Total income	2 842.8	3 369.6	18.5
Operating profit before tax	216.0	275.4	27.5
	%	%	..
Operating profit margin	7.7	8.3	..

Source: *Real Estate Agents Industry, Australia, 1995–96* (8663.0).

There were 45,956 persons employed in the industry at 30 June 1996. Full-time employment accounted for 85% while the remainder worked part time. Employment in the industry at 30 June 1996 represented a 12% increase since June 1993, with full-time employment increasing 13% while part-time employment increased by only 7%.

There were a further 9,830 persons working in the industry at 30 June 1996 on a commission only basis. The number of staff working on this basis declined 11% since June 1993, when there were 10,978 persons working on commission only.

Total income of the industry in 1995–96 was \$3,370m, an increase of 19% since 1992–93. After expenses the industry had an operating profit before tax of \$275m. This represented an operating profit margin of 8.3%, which was slightly higher than the operating profit margin (7.7%) recorded in 1992–93.

### Legal and accounting services

As shown in table 21.10, there were 18,185 businesses in the legal and accounting services industries at 30 June 1996, an increase of 4% since June 1993. Within the legal profession, there were 9,796 practices, an overall increase of 11% since June 1993, with solicitor practices increasing 15% and barrister practices increasing only 5%. Within the accounting profession, there were 8,389 businesses, a decline of 4% since June 1993.

The legal and accounting services industries employed a total of 134,286 persons at 30 June 1996, an increase of 9% since June 1993. For both professions the most significant increase in employment since 1993 occurred in qualified employees, this category increasing by 28% and 22% in legal and accounting services respectively. In contrast, the increase in support staff (i.e. other employees) was small, 3% in legal services and 6% in accounting services. As a result, the number of support staff per principal or qualified employee has fallen in both industries (e.g. in the legal services industry there has been a reduction from 1.6 support staff for each principal or practitioner in 1993 to a ratio of 1.4 in 1996).

#### 21.10 LEGAL AND ACCOUNTING SERVICES INDUSTRIES

	1992–93	1995–96	Increase
LEGAL SERVICES			
	no.	no.	%
Businesses			
Solicitors	5 579	6 403	14.8
Barristers	3 184	3 350	5.2
Other	87	43	-50.6
<i>Total businesses</i>	8 850	9 796	10.7
	persons	persons	%
Employment			
Principals	15 606	16 417	5.2
Qualified employees	9 059	11 554	27.5
Other employees	38 442	39 523	2.8
<i>Total employment</i>	63 108	67 494	6.9
	\$m	\$m	%
Total income	5 144.0	5 590.9	8.7
Operating profit before tax	1 655.5	1 750.4	5.7
	%	%	
Operating profit margin	32.6	31.5	..
ACCOUNTING SERVICES			
	no.	no.	%
Businesses	8 699	8 389	-3.6
	persons	persons	%
Employment			
Principals	14 143	15 409	9.0
Qualified employees	18 277	22 207	21.5
Other employees	27 580	29 175	5.8
<i>Total employment</i>	60 000	66 792	11.3
	\$m	\$m	%
Total income	4 086.4	4 939.1	20.9
Operating profit before tax	828.6	954.6	15.2
	%	%	
Operating profit margin	20.5	19.4	..
LEGAL AND ACCOUNTING SERVICES			
	no.	no.	%
Businesses	17 549	18 185	3.6
	persons	persons	%
Employment	123 108	134 286	9.1
	\$m	\$m	%
Total income	9 230.4	10 530.0	14.1
Operating profit before tax	2 484.1	2 705.0	8.9
	%	%	
Operating profit margin	26.9	25.7	..

Source: *Legal and Accounting Services, Australia 1995–96* (8678.0).

The legal and accounting services industries generated total income of \$10,530m in 1995–96, the legal services industry being the larger contributor with total income of \$5,591m. The combined industries had an operating profit before tax of \$2,705m. Again the legal services industry was the larger contributor with \$1,750m, compared to \$955m operating profit before tax by the accounting services industry.

Both industries recorded a small decline in operating profit margin. The legal services industry had an operating profit margin in 1995–96 of 31.5% compared to 32.6% recorded in 1992–93, while the accounting services industry recorded a decline from 20.5% in 1992–93 to 19.4% in 1995–96.

### Consultant engineering services

The ABS conducted a survey of the consultant engineering services industry for 1995–96, to update the results of a survey in respect of 1992–93. There were 5,514 businesses in the industry at 30 June 1996 (table 21.11). This represented an increase of only 1% in the three year period since June 1993.

**21.11 CONSULTANT ENGINEERING SERVICES INDUSTRY**

	1992–93	1995–96	Increase
	no.	no.	%
Businesses	5 454	5 514	1.1
	persons	persons	%
Employment			
Full-time	23 244	25 384	9.2
Part-time	4 964	5 352	7.8
Total employment	28 208	30 736	9.0
Contract and agency staff	3 954	8 212	107.7
	\$m	\$m	%
Total income	2 357.7	3 233.3	37.1
Expenses			
Labour costs	971.1	1 241.6	27.9
Payments to contract and agency staff	448.7	498.6	11.1
Other expenses	782.1	995.9	27.3
Total expenses	2 201.9	2 736.2	24.3
Operating profit before tax	155.7	351.0	125.4
	%	%	
Operating profit margin	6.7	11.0	..

Source: *Consultant Engineering Services, Australia 1995–96* (8693.0).

The consultant engineering services industry employed a total of 30,736 persons at 30 June 1996. Full-time employment accounted for 83% (25,384 persons) while the remainder worked part-time. Employment in the industry at 30 June 1996 represented a 9% increase since June 1993. In addition to 30,736 employed persons, a further 8,212 persons were working on a contract or agency basis in the industry at 30 June 1996. The number of staff working on this basis more than doubled since June 1993, when there were 3,954 contract and agency staff. Overall 38,948 persons were working in the industry at 30 June 1996, an increase of 21% since June 1993.

The 5,514 businesses operating at 30 June 1996 generated a total income of \$3,233m and had expenses of \$2,736m. The main sources of income were civil engineering (\$505m), mining and geotechnical engineering services (\$463m) and building/structural engineering services (\$391m). The main items of expense were labour costs and payments to contractors and agency staff, which together accounted for 64% of all expenses in 1995–96.

The consultant engineering services industry recorded an operating profit before tax of \$351m for the 1995–96 financial year, which represented an operating profit margin of 11.0%. This was a significant increase on the profit margin (6.7%) recorded in 1992–93.

### Computing services

The computing services industry consists of businesses involved in providing services in data processing, information storage and retrieval, computer maintenance and computer consultancy. The ABS conducted a survey of the computing services industry for 1995–96, the first survey of the industry since 1992–93. In the intervening three years, the industry has undergone very significant growth, as shown in table 21.12.

In the three years since 1993, the number of businesses in the industry nearly doubled, from 4,894 businesses at 30 June 1993 to 9,679 at 30 June 1996. Similarly, employment in the industry increased significantly (by 83%) since June 1993, with employment at 30 June 1996 of 55,046 persons.



**21.12 COMPUTING SERVICES INDUSTRY**

	1992-93	1995-96	Increase
	no.	no.	%
Businesses	4 894	9 679	97.8
	persons	persons	%
Employment			
Full-time	26 017	48 123	85.0
Part-time	4 039	6 922	71.4
Total employment	30 056	55 046	83.1
	\$m	\$m	%
Income			
Income from computing services	3 175.8	6 324.0	99.1
Income from communication services	95.5	147.9	54.9
Income from hardware sales	505.0	1 047.8	107.5
Other income	323.9	568.6	75.5
Total income	4 100.2	8 088.3	97.3
Operating profit before tax	364.9	455.1	24.7
	%	%	..
Operating profit margin	9.3	5.7	..

Source: *Computing Services Industry, Australia, 1995-96* (8669.0).

Total income of the industry in the financial year 1995-96 was \$8,088m, an increase of 97% on that recorded in 1992-93. The major component was income from computing services, which accounted for 78% of all income. Income from hardware sales accounted for 13% of total income. The relative contributions by income component recorded for 1995-96 were similar to those recorded for 1992-93.

In spite of the large growth in total income, the operating profit before tax of the industry for 1995-96, at \$455m, was only 25% higher than that recorded for 1992-93. This small growth in operating profit before tax, relative to the large growth in income, resulted in a significant decline in the industry operating profit margin, from 9.3% in 1992-93 to 5.7% in 1995-96.

**Private medical practice**

The ABS conducted its first survey of the private medical practice industry in respect of 1994-95. At 30 June 1995, there were 22,298 businesses in the industry, with slightly more general practice medical businesses than specialist medical businesses. The businesses had employment of 106,134 persons, including 33,987 medical practitioners, at 30 June 1995 (table 21.13).

The private medical practice industry generated gross income of \$7,241m in 1994-95, specialist medical businesses accounting for 61% (\$4,405m) of the total. Expenses for the industry totalled \$5,391m, of which wages and salaries paid (\$2,649m) was the largest component (49%). Wages and salaries paid to medical practitioners totalled \$1,367m.

After allowance for expenses, the operating profit before tax of medical practice businesses was \$1,850m, specialist medical businesses accounting for the bigger share (58%). The operating profit margin of the industry was 25.6%.

**21.13 PRIVATE MEDICAL PRACTICE INDUSTRY—1994-95**

	Unit	General practice medical businesses	Specialist medical businesses	Total
Businesses at 30 June 1995	no.	11 933	10 364	22 298
Employment at 30 June 1995				
Medical practitioners	persons	20 825	13 161	33 987
Other	persons	33 831	38 316	72 147
Total employment	persons	54 657	51 477	106 134
Gross income	\$m	2 836.3	4 404.6	7 240.9
Expenses				
Wages and salaries				
Medical practitioners	\$m	611.3	755.9	1 367.2
Other	\$m	502.6	779.5	1 282.2
Total wages and salaries	\$m	1 113.9	1 535.5	2 649.4
Other expenses	\$m	944.2	1 797.0	2 741.2
Total expenses	\$m	2 058.1	3 332.5	5 390.6
Operating profit before tax	\$m	778.2	1 072.1	1 850.3
Operating profit margin	%	27.6	24.6	25.6

Source: *Private Medical Practice Industry, Australia, 1994-95* (8685.0).



## Community services

The ABS conducted its first comprehensive survey of the community services industry for 1995–96. The survey covered businesses mainly involved in the provision of child care services, accommodation for the aged, other residential care services, non-residential care services and nursing homes.

At 30 June 1996, there were 7,207 businesses in the community services industry. Of these, 70% were 'not for profit' organisations (i.e. businesses whose status does not permit them to be a source of income, profit or financial gain for the entities which establish, control or finance them). The 2,143 'for profit' organisations were mainly concentrated in the child care industry (60%) and nursing homes (25%).

Overall, the industry employed 248,953 persons at 30 June 1996. The majority (68%) of these were employed on a part-time basis. The

proportion of persons employed on a part-time basis varied from industry to industry, with the nursing homes industry having the highest incidence (78%) of part-time employees.

In addition to 248,953 persons employed, a further 211,144 persons were working in the industry in June 1996 as volunteers. These were particularly important in the non-residential services industry, with 146,444 persons providing volunteer services to businesses in the industry at 30 June 1996.

The community services industry generated \$7,295m in income in 1995–96. Government funding was the source of \$3,905m (54%) while sales of goods and services accounted for 32% (\$2,351m) of income. The role of government funding was particularly significant in the nursing homes industry, accounting for 60% of total income. Total expenses of the community services industry were \$6,951m, labour costs representing the largest proportion (65%).

### 21.14 COMMUNITY SERVICES INDUSTRY—1995–96

	Unit	Child care services	Accommodation for the aged	Residential care services n.e.c.	Non-residential care services n.e.c.	Nursing homes	Total
<b>Businesses at 30 June 1996</b>							
For profit organisations	no.	1 290	159	73	83	538	<b>2 143</b>
Not for profit organisations	no.	1 515	534	535	2 158	323	<b>5 065</b>
Total businesses	no.	2 805	693	608	2 241	860	<b>7 207</b>
<b>Employment at 30 June 1996</b>							
Full-time	persons	15 474	9 976	7 488	25 004	21 943	<b>79 885</b>
Part-time	persons	20 661	23 445	9 358	38 650	76 954	<b>169 068</b>
Total employment	persons	36 135	33 421	16 846	63 654	98 897	<b>248 953</b>
Volunteers	persons	19 538	18 684	10 899	146 444	15 579	<b>211 144</b>
<b>Income</b>							
Government funding	\$m	455.9	464.5	293.5	929.9	1 761.6	<b>3 905.4</b>
Sales of goods and services	\$m	357.7	454.6	90.9	444.4	1 003.2	<b>2 350.8</b>
Other income	\$m	20.3	150.5	83.9	615.3	168.4	<b>1 038.4</b>
Total income	\$m	833.9	1 069.6	468.3	1 989.6	2 933.2	<b>7 294.6</b>
<b>Expenses</b>							
Labour costs	\$m	536.0	618.2	352.2	971.8	2 056.5	<b>4 534.7</b>
Other expenses	\$m	255.7	373.7	152.2	898.7	736.3	<b>2 416.6</b>
Total expenses	\$m	791.7	991.9	504.4	1 870.5	2 792.8	<b>6 951.3</b>

Source: Community Services, Australia, 1995–96 (8696.0).

**21.15 SPORTS INDUSTRIES—1994–95**

	Unit	Horse and dog racing	Sports ground and facilities n.e.c.	Sports and services to sports n.e.c.	Total
Businesses at 30 June 1995	no.	898	1 581	2 588	<b>5 066</b>
Employment at 30 June 1995					
Full-time	persons	4 869	7 208	6 879	<b>18 956</b>
Part-time	persons	9 249	14 355	15 854	<b>39 458</b>
Total employment	persons	14 118	21 563	22 732	<b>58 414</b>
Volunteers	persons	258	11 865	100 754	<b>112 877</b>
Total Income	\$m	789.1	796.3	931.6	<b>2 517.0</b>
Operating profit before tax	\$m	50.6	49.0	70.1	<b>169.7</b>
Operating profit margin	%	6.6	6.5	8.7	<b>7.3</b>

Source: *Sports Industries, Australia, 1994–95* (8686.0).

**Sports industries**

The sports industries cover businesses involved in horse and dog racing, operations of sports grounds and facilities, other sports, and services to sports. These industries were surveyed by the ABS for the first time in respect of 1994–95.

There were 5,066 businesses in the sports industries in 1994–95. These businesses had a total employment of 58,414 persons at 30 June 1995 (table 21.15). There were a further 112,877 volunteers in these industries at 30 June 1995.

The sports industries generated \$2,517m in income during 1994–95 and had an operating profit before tax of \$169.7m. This represented an operating profit margin of 7.3%. A factor affecting the operating profit margin is the existence of many 'not for profit' organisations in the industry.

**Travel agency services**

The travel agency services industry covers those businesses whose main activity is the provision of travel agency services such as transport and/or accommodation bookings and tour wholesaling or retailing. The ABS conducted a survey of this industry in respect of 1996–97. It was the second survey of the industry undertaken by the ABS, the previous one being in respect of 1986–87.

As shown in table 21.16 there were 3,266 businesses involved in the travel agency services industry at 30 June 1997. These businesses comprised 2,842 retail travel agent businesses, 174 wholesalers/ticket consolidators, 170 inbound tour operators and 80 tourist bureaus.

**21.16 TRAVEL AGENCY SERVICES INDUSTRY—1996–97**

	Unit	Retailers	Wholesalers and ticket consolidators	Inbound tour operators	Tourist bureaus	Total
Businesses at 30 June 1997	no.	2 842	174	170	80	<b>3 266</b>
Employment at 30 June 1997						
Full-time	persons	13 508	3 985	1 699	310	<b>19 502</b>
Part-time	persons	2 997	577	1 078	298	<b>4 949</b>
Total employment	persons	16 505	4 562	2 777	608	<b>24 451</b>
Income						
Ticket sales	\$m	903.4	373.9	287.5	6.0	<b>1 570.8</b>
Other travel related income	\$m	133.8	40.2	18.3	2.2	<b>194.6</b>
Other income	\$m	92.1	68.7	34.3	19.1	<b>214.2</b>
Total income	\$m	1 129.3	482.8	340.1	27.3	<b>1 979.5</b>
Expenses						
Labour costs	\$m	407.1	156.8	70.3	13.7	<b>647.9</b>
Other expenses	\$m	628.7	395.4	248.9	14.7	<b>1 287.7</b>
Total expenses	\$m	1 035.8	552.2	319.2	28.4	<b>1 935.6</b>
Operating profit before tax	\$m	89.4	-72.5	21.3	-0.9	<b>37.3</b>
Operating profit margin	%	8.1	-16.8	6.5	-5.3	<b>2.0</b>

Source: *Travel Agency Services Industry, Australia, 1996–97* (8653.0).

The industry generated a total income of \$1,980m in 1996–97. Retail travel agency businesses accounted for \$1,129m (57%) of this income while wholesalers/ticket consolidators were the other major contributor, accounting for \$483m or 24% of the income of the industry.

Total employment of the industry at 30 June 1997 was 24,451 persons, the majority (80% or 19,502 persons) employed on a full-time basis. The retail travel agents component of the industry, accounting for 68% (16,505 persons), was the main contributor to employment in the industry.

The travel agency services industry generated an operating profit before tax of \$37m in 1996–97. This represented an operating profit margin of 2.0% for the year. However, the operating profit margin varied considerably depending on the type of travel agency business. While retail travel agents (8.1%) and inbound tour operators (6.5%) both recorded positive operating margins, wholesale travel agency businesses recorded a negative operating profit margin (–16.8%) as a result of a net loss for the 1996–97 of \$73m.

## Interest groups

The first ABS survey of the interest groups industry was conducted in respect of the 1995–96 financial year. The interest groups industry includes organisations mainly engaged in promoting the interests of employers or self-employed persons, employees and other community interests. It includes business associations, professional organisations, chambers of commerce, industrial or trade unions, consumer associations, automobile associations, political parties etc.

At 30 June 1996, there were 3,186 businesses and other organisations in the interest groups industry (table 21.17). The industry employed a total of 47,072 persons at 30 June 1996, with 55% being employed on a full-time basis. In addition, there were 101,622 persons working in the industry on a volunteer basis.

Total income of the interest groups industry in 1995–96 was \$3,251m, with the interest groups n.e.c. industry accounting for 54% of the total, business and professional associations accounting for 31%, and labour associations accounting for the balance (15%). The major expense of the industry was labour costs of \$1,237m, which represented 41% of all expenses.

**21.17 INTEREST GROUPS INDUSTRY—1995–96**

	Unit	Business and professional associations	Labour associations	Interest groups n.e.c.	Total
Organisations at 30 June 1996	no.	2 842	174	170	<b>3 186</b>
Employment at 30 June 1996					
Full-time	persons	8 143	3 879	13 986	<b>26 008</b>
Part-time	persons	2 559	770	17 735	<b>21 064</b>
Total employment	persons	10 702	4 649	31 721	<b>47 072</b>
Volunteers at end June 1996	persons	15 557	5 221	80 844	<b>101 622</b>
Income					
Membership/affiliation fees or levies	\$m	488.7	426.8	406.1	<b>1 321.6</b>
Government funding	\$m	86.5	7.3	371.8	<b>465.6</b>
Sales of goods and services	\$m	272.0	16.2	560.2	<b>848.4</b>
Other income	\$m	161.5	45.3	408.9	<b>615.7</b>
Total income	\$m	1 008.7	495.6	1 747.0	<b>3 251.3</b>
Expenses					
Labour costs	\$m	358.9	205.8	672.0	<b>1 236.7</b>
Other expenses	\$m	594.3	255.0	915.6	<b>1 764.9</b>
Total expenses	\$m	953.2	460.8	1 587.6	<b>3 001.6</b>

Source: Interest Groups, Australia, 1995–96 (8639.0).

## 21.18 LIBRARIES INDUSTRY—1996–97

	Unit	Public libraries	Archival service organisations	Other libraries	Total
Organisations at 30 June 1997	no.	527	9	28	<b>564</b>
Locations at end June 1997	no.	1 427	11	30	<b>1 468</b>
Employment at 30 June 1997					
Full-time	persons	5 940	763	26	<b>6 729</b>
Part-time	persons	4 722	122	64	<b>4 908</b>
Total employment	persons	10 662	885	90	<b>11 637</b>
Income					
Government funding	\$m	506.9	73.5	16.2	<b>596.7</b>
Other income	\$m	51.5	7.0	11.4	<b>69.9</b>
Total income	\$m	558.4	80.6	27.7	<b>666.6</b>
Expenses					
Wages and salaries	\$m	282.6	32.2	12.0	<b>326.8</b>
Other expenses	\$m	246.5	44.6	12.6	<b>303.7</b>
Total expenses	\$m	529.1	76.8	24.6	<b>630.5</b>
Industry gross product	\$m	343.3	42.8	20.4	<b>406.4</b>

Source: *Libraries and Museums, Australia—1996–97* (8649.0).

## Libraries

The ABS conducted its first comprehensive survey of the libraries industry in respect of the 1996–97 financial year. The survey covered all businesses and organisations whose main activity was the acquisition, collection, organisation, conservation and loan of library materials such as books, magazines, manuscripts, musical scores, maps and prints. It also included archival service activities. In addition, the library activities of local government authorities were included in the survey. Libraries with restricted access such as those operated by educational institutions (universities and schools), and libraries operated by businesses for internal reference purposes, were excluded from the survey.

As shown in table 21.18, at the end of June 1997 there were 564 organisations in the libraries industry. These organisations operated from 1,468 locations and employed 11,637 persons. Of these, 58% were employed on a full-time basis.

Total income of the industry in 1996–97 was \$667m. The great majority was from government funding, which accounted for \$597m or 90%. Expenses of the industry totalled \$631m, with wages and salaries accounting for over half (52%) of all expenses.

## Museums

In conjunction with the first survey of the libraries industry, the ABS also conducted its first comprehensive survey of the museums industry in respect of the 1996–97 financial year. The survey covered all businesses and organisations whose main activity was the operation of art museums, museums and historic houses. Also included in the survey were the museum activities of local government authorities, where their operations had paid staff. Non-employed museums were excluded from the survey.

In total, there were 224 organisations in the museums industry at 30 June 1997 (table 21.19). These organisations operated from a total of 352 locations. Museums constituted the most common type of business in the industry (102 organisations), and there were 32 art museum organisations, 69 local government authorities which operated museums, and 21 organisations which operated historic houses.

Employment in the industry totalled 5,636 persons, with 65% being employed on a full-time basis. There were also 8,443 volunteers working in the industry at 30 June 1997. During 1996–97, there were 8,483,000 paid admissions to museums, generating admissions income of \$41m, which represented an average admittance price of \$4.85. In addition, there were 8,304,000 free admissions.

## 21.19 MUSEUMS INDUSTRY—1996–97

	Unit	Art museums	Museums	Local government museums/art museums	Historic houses	Total
Organisations at 30 June 1997	no.	32	102	69	21	<b>224</b>
Locations at end June 1997	no.	32	111	92	117	<b>352</b>
Employment at 30 June 1997						
Full-time	persons	941	2 203	176	347	<b>3 667</b>
Part-time	persons	289	1 038	268	375	<b>1 970</b>
Total employment	persons	1 230	3 240	444	722	<b>5 636</b>
Volunteers at end June 1997	persons	1 654	4 300	1 745	744	<b>8 443</b>
Admissions						
Paid admissions	'000	1 599	5 325	398	1 161	<b>8 483</b>
Free admissions	'000	3 162	3 351	1 599	192	<b>8 304</b>
Total admissions	'000	4 762	8 676	1 997	1 353	<b>16 787</b>
Income						
Government funding	\$m	80.7	157.5	18.4	14.0	<b>270.6</b>
Admissions income	\$m	9.1	22.8	1.0	8.2	<b>41.1</b>
Other income	\$m	40.5	54.3	2.7	16.1	<b>113.6</b>
Total income	\$m	130.3	234.6	22.0	38.3	<b>425.2</b>
Expenses						
Labour costs	\$m	48.3	106.6	9.7	16.2	<b>180.8</b>
Other expenses	\$m	61.1	128.8	9.5	21.5	<b>221.0</b>
Total expenses	\$m	109.4	235.3	19.2	37.8	<b>401.7</b>
Industry gross product	\$m	50.4	123.5	9.7	15.5	<b>199.1</b>

Source: *Libraries and Museums, Australia, 1996–97* (8649.0).

Total income of the industry in 1996–97 was \$425m. In addition to the \$41m in admissions income, the other main item of income was government funding of \$271m, which accounted for 64% of all income. Expenses for the year totalled \$402m, with labour costs accounting for 45%.

### Motion picture exhibition

The ABS conducted a survey of the motion picture exhibition industry for 1996–97, the first survey of the industry since 1993–94. In the intervening three years, the industry has undergone very significant growth, as shown in table 21.20.

While the number of businesses has declined from 224 in 1994 to only 188 businesses in 1997, a fall of 16%, most other measures have shown a significant increase. The number of screens has increased 39% to 1,050 screens at 30 June 1997, while the number of seats available has increased from 227,000 in 1994 to 323,000 in 1997. Overall the number of paid admissions has increased 22% from 60.0 million in 1993–94 to 73.3 million

in 1996–97. The latter represents four visits per person, based on the Australian population of 18.5 million persons at the end of June 1997.

Employment in the industry was 7,739 persons at 30 June 1997, an increase of 35% on the 5,729 persons employed at June 1994. Of the former, the majority (80%) were employed on a part-time basis.

Total income of the industry in the financial year 1996–97 was \$832m, an increase of 31% on that recorded in 1993–94. Box office receipts were the major component of income, accounting for 66% (\$552m), while sales of food and beverages accounted for 17% of income.

The major items of expenses for the industry in 1996–97 were labour costs, which accounted for \$123m (17%) and film hire/rental which accounted for \$211m (30%). After deduction of expenses, the industry recorded a profit before income tax of \$120m, which represented an operating profit margin of 14.9%, up marginally on the 12.0% recorded in 1993–94.

## 21.20 MOTION PICTURE EXHIBITION INDUSTRY

	1993-94	1996-97	Increase
	no.	no.	%
Businesses	224	188	-16.1
Cinema screens	754	1 050	39.3
Cinema seats	227,000	323,000	42.3
Paid admissions	60 047 000	73 262 000	22.0
	persons	persons	%
Employment			
Full-time	1 205	1 545	28.2
Part-time	4 523	6 194	36.9
Total employment	5 729	7 739	35.1
	\$m	\$m	%
Income			
Gross box office receipts	447.5	551.8	23.3
Sales of food and beverages	105.0	142.1	35.3
Other income	82.8	138.3	67.0
Total income	635.3	832.2	31.0
Expenses			
Labour costs	99.0	123.1	24.3
Film hire/rental	168.1	211.2	25.6
Other expenses	293.0	378.9	29.3
Total expenses	560.1	713.2	79.3
Operating profit before tax	75.1	119.9	59.7
	%	%	
Operating profit margin	12.0	14.9	..

Source: Motion Picture Exhibition, Australia 1996-97 (8654.0).

## Zoos, parks and gardens

For reference year 1996-97, the ABS conducted a number of collections in respect of the cultural and recreational industries. Included in that program was a survey of organisations in the zoos, parks and gardens industry.

As shown in table 21.21 there were 802 organisations in the industry at the end of June 1997. These comprised 65 organisations mainly involved in the operation of zoos and aquaria, 53 involved in the operation of botanical gardens and 684 involved in the operation of national parks and recreational parks and gardens. At 30 June 1997 these organisations employed a total of 19,721 persons, the majority (87%) of whom were employed on a full-time basis. The activity generating the greatest employment was the operation of national parks,

and recreational parks and gardens which accounted for employment of 16,646 persons. There were a further 13,371 volunteers working in the zoos, parks and gardens industry at 30 June 1997.

Total income of the industry in 1996-97 was \$1,572m. Government funding of \$1,294m accounted for 82% of all income. Zoos and aquaria, which generated 49% (\$69m) from admissions income, were the only industries within the zoos, parks and gardens industry group where government funding was not the major source of income. The admissions income of \$69m resulted from 7,979,000 admissions during the year, which represented an average admission price of \$8.67.

Total expenses for 1996-97 were \$1,317m, with labour costs accounting for 48% (\$627m).

**21.21 ZOOS, PARKS AND GARDENS INDUSTRY—1996–97**

	Unit	Zoos and aquaria	Botanical gardens	National parks and recreational parks and gardens	Total
Organisations at 30 June 1997	no.	65	53	684	<b>802</b>
Locations at end June 1997	no.	69	92	52 963	<b>53 124</b>
Employment at 30 June 1997					
Full-time	persons	1 268	948	15 035	<b>17 251</b>
Part-time	persons	677	182	1 611	<b>2 470</b>
Total employment	persons	1 946	1 129	16 646	<b>19 721</b>
Volunteers at end June 1997	persons	1 591	1 101	10 679	<b>13 371</b>
Paid admissions	'000	7 979	n.a.	n.a.	<b>n.a.</b>
Income					
Government funding	\$m	25.5	70.9	1 197.4	<b>1 293.8</b>
Admissions income	\$m	69.2	0.9	55.9	<b>126.0</b>
Other income	\$m	47.7	10.8	93.8	<b>152.3</b>
Total income	\$m	142.4	82.6	1 346.9	<b>1 571.9</b>
Expenses					
Labour costs	\$m	57.8	40.7	528.3	<b>626.8</b>
Other expenses	\$m	69.1	29.5	591.6	<b>690.2</b>
Total expenses	\$m	126.9	70.2	1 119.9	<b>1 317.0</b>
Industry gross product	\$m	74.4	48.2	542.9	<b>665.5</b>

Source: Zoos, Parks and Gardens Industry, Australia, 1996–97 (8699.0).

## Radio and television services

The ABS conducted its second survey of the radio and television services industries, in respect of 1996–97, following a survey in respect of 1993–94. In the three years since the first survey, there has been significant change, particularly in the television services industry with the emergence of pay television. Table 21.22 summarises the main results for the two years.

Within the radio industry, while the number of businesses fell marginally, employment in the industry increased by 5%. A significant (21%) increase in income during the period culminated in an operating profit before tax of \$93m during 1996–97. This represented an operating profit margin of 14.9%, compared with 3.6% in 1993–94.

The television services industry has undergone significant change since 1993–94. This is illustrated in table 21.22, which shows a major turnaround in operating profit before tax. In 1993–94, the industry recorded an operating profit of \$378m, whereas in 1996–97 there was an operating loss of \$324m. The reason was the emergence of pay television broadcasting businesses which recorded a loss of \$1,058m in 1996–97, more than offsetting the \$734m operating profit before tax recorded by commercial free-to-air broadcasters.

Due to these factors, the television services industry as a whole experienced a turnaround in its operating profit margin, from 17% in 1993–94 to –9.7% in 1996–97.

## 21.22 RADIO AND TELEVISION SERVICES INDUSTRIES

	1993-94	1996-97	Increase
RADIO SERVICES			
	no.	no.	%
Number of businesses			
Commercial broadcasters	117	103	-12.0
Community broadcasters	130	121	-6.9
Other broadcasters	18	37	105.6
<i>Total</i>	265	261	-1.5
	persons	persons	%
Employment			
Commercial broadcasters	4 273	4 361	2.1
Community broadcasters	517	499	-3.5
Other broadcasters	39	204	423.1
<i>Total</i>	4 829	5 064	4.9
	\$m	\$m	%
Total income	513.9	622.7	21.1
Operating profit before tax	18.5	92.6	..
	%	%	—
Operating profit margin	3.6	14.9	..
TELEVISION SERVICES			
	no.	no.	%
Number of businesses			
Free-to-air broadcasters	n.a.	34	..
Pay television broadcasters	n.a.	7	..
Community broadcasters	n.a.	7	..
<i>Total</i>	43	48	11.6
	persons	persons	%
Employment			
Free-to-air broadcasters	n.a.	6 758	..
Pay television broadcasters	n.a.	2 085	..
Community broadcasters	n.a.	30	..
<i>Total</i>	8 422	8 873	5.4
	\$m	\$m	%
Income			
Sale of airtime	1 982.3	2 365.0	19.3
Other income	241.8	985.7	216.9
<i>Total income</i>	2 224.1	3 350.7	50.7
Operating profit before tax			
Free-to-air broadcasters	n.a.	734.3	..
Pay television broadcasters	n.a.	-1 058.4	..
Community broadcasters	n.a.	0.2	..
<i>Total</i>	377.6	-324.0	..
	%	%	—
Operating profit margin	17.0	-9.7	..

(a) Excludes public broadcasters.

Source: Radio and Television Services, Australia, 1996-97 (8680.0).



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# Australia's non-profit sector

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## Introduction

Australians tend to divide the world of organisations into two types or sectors: government and business. They tend to overlook a third, distinct sector, commonly called the non-profit sector. Non-profit organisations (or 'non-profits') are the product of commitments by groups of people to provide a service for themselves or others, to represent their interests or lobby on behalf of others, or to practice a religion. They are not part of government, even though they may perform a public service; neither are they established or operated to make a profit for their owners.

Many well-known organisations are non-profit organisations, for example: Opera Australia and the Australian Football League; the ACTU and the Business Council of Australia; the Australian Jockey Club and the Surf Lifesaving Association; the Melbourne Club and the Returned Services League; the Brotherhood of St Laurence and the Salvation Army; the Australian Labor Party and Pauline Hanson's One Nation Party; the Australian Medical Association and Greenpeace; Geelong Grammar and the Workers Educational Association. Many more non-profits constitute the fabric of local communities, for example: local play groups and child care centres, sporting clubs and associations, recreation clubs and societies, churches and church groups, residents' associations, and service clubs.

Non-profit organisations are many and varied, but together they constitute a separate, distinct class of organisations, neither government nor business, with their own distinctive rules and characteristics. These are reviewed below. The rules for defining the non-profits are easy enough to state, but a little more difficult to apply in all circumstances.

Non-profit organisations are, first of all, organisations. This means that a non-profit organisation will have a set of rules or a constitution that gives it a life beyond the group that began it. Non-profits may be incorporated, a legal term meaning that the organisation has a legal identity independent of its members. Larger non-profits, which employ people, are incorporated in most instances. However, the

great majority of non-profits, which are small and rely entirely on volunteer behaviour, are not incorporated.

Secondly, non-profit organisations are private organisations; that is, they are not directly subject to government control or direction. This does not mean that governments do not try to regulate and direct their behaviour. They do, especially when they provide a large component of a non-profit's operating revenue. However, governments try to regulate the behaviour of for-profit organisations as well. The key tests of whether an organisation is private or part of government are whether it is subject to ministerial direction and whether its actions are subject to the same parliamentary scrutiny as are the actions of government departments.

Thirdly, as their name indicates, they operate on a 'not-for-profit' basis. While in some respects they are like private, for-profit companies, they differ from the latter in that they do not distribute any surplus or profit they might make to their members. This characteristic, part of the definition of a non-profit, does not mean that non-profits do not finish each financial year with a small excess of income over expenditure, or profit; most of them do. Like any private organisation, if a non-profit did not make a surplus in most years it would soon cease to exist. It does mean, however, that making the largest possible profit is not, and should not be, an objective of the organisation.

In determining which organisations are non-profits, there are two ways of interpreting the rule regarding the non-distribution of profits. The strict way is to require that any surplus remains with the organisation, to be spent providing additional services or better facilities. According to some, this interpretation excludes, from the non-profit sector, organisations such as mutual insurance societies, credit unions and trading cooperatives. Mutual insurance societies and credit unions try to benefit their members by making loans or selling insurance at lower than market prices and by paying a marginally higher interest on deposited funds. Trading cooperatives distribute some of their surplus, but in a manner quite unlike a private company,

either through lower prices in the case of consumer cooperatives, or by means of a dividend in the case of producer cooperatives. However, in both cases the amount varies according to the level of use each member made of the cooperative. As well, cooperatives are governed according to the democratic principle that gives each member one vote. They are the product of attempts by people in earlier times to find strength through cooperation organised along democratic lines. When it comes to determining whether cooperatives or mutuals are part of the non-profit sector, North Americans tend to insist on the strict interpretation and exclude them. By contrast, Europeans, more mindful of their traditions of cooperation and solidarity, favour the wider perspective which they call the social economy. The European approach has some merit. The organisational rules governing mutuals and cooperatives clearly distinguish them from for-profit firms and give them a strong resemblance to many conventional non-profits.

A fourth distinguishing feature of non-profits is that they involve some degree of voluntary commitment of time. Most non-profits rely entirely on work performed without pay by their members or supporters. Others employ people to provide their services and manage them, but even these use volunteer labour to some degree, even if it is only the time committed by their unpaid governors or directors.

Non-profits generally are distinguishable from for-profit and government organisations in other ways as well. With very few exceptions, non-profit organisations are member-owned organisations. The exceptions are non-profits owned by other non-profits, such as a hospital or a school owned by a Catholic religious order. Members have rather different expectations of an organisation than do shareholders or conventional owners who expect to benefit financially from their investment. Because they are generally the product of peoples' enthusiasms or commitments, non-profits are strongly value driven. This often makes their governance lively and contested. Because they do not have as their major goal obtaining the largest possible return on funds invested, their performance is hard to evaluate.

Finally, the financing of non-profits is generally far more complicated than it is for government or for-profit organisations of similar size. Unlike for-profit firms, few non-profits derive all their operating income from the sale of goods or services. Few are entirely dependent on government funding. Those that do receive

revenue from sales also rely on membership fees, and on revenue derived from special events such as conferences. non-profits that provide services to a wider public also rely heavily on funds from third parties. These vary in source and in the form in which they are received. They include government funding, donations from individuals and companies, revenue from various fundraising events, and sponsorship, unrelated business ventures and returns on investments. The successful management of these various revenue streams can be quite a daunting task.

As already indicated, most non-profit organisations are not incorporated, and so they have no legal identity independent of their members. This is satisfactory for small local groups, but creates many problems for organisations which own property, employ people and enter into contracts. Australian laws have created many different ways for non-profit associations to incorporate. These ways all recognise the special character of non-profits and are not available to groups of people who wish to combine to make a profit. The most common form of incorporation is the incorporated association. Each State and Territory has legislation which enables groups of people to incorporate as associations. There are about 100,000 incorporated associations active throughout Australia. Other common forms of incorporation available to non-profits include as a company limited by guarantee and as a cooperative. There are about 10,000 companies limited by guarantee and 3,500 cooperatives.

There are many paths to incorporation other than the three mentioned above. These are available to specialised non-profits such as: Aboriginal associations, school parent associations, trade unions and bodies corporate established under strata title legislation. Some non-profits, such as the larger Christian denominations, or older charities such as the Benevolent Society of New South Wales or the Red Cross, are incorporated by their own legislation or by royal charter.

The Government also recognises the special status of almost all non-profit associations by exempting them from income tax. Even those few that are not exempt from income tax are exempted from paying tax on their members' subscriptions. Depending on their activity, many non-profits are exempted from paying other taxes, such as the fringe benefits tax, sales tax and rates. The Commonwealth Government's proposed introduction of a Goods and Services Tax may reduce the scope of these exemptions to some degree.

## Economic impact

Non-profit organisations play an important role in Australia's economy, society and political system. It is somewhat easier to measure their economic contribution than their social and political impact. This is because we have some generally agreed measures of economic impact, such as employment or expenditure. Even so, there is still much we do not know about Australia's non-profit organisations.

The group of non-profits having the greatest economic impact are those that employ people. There are about 32,000 of these, almost all of them incorporated. They are also the group of non-profits which are included in the country's economic statistics. As a result, some estimates can be made of their economic impact. As part of the first extensive study of Australia's non-profit sector, the ABS has been assisting the Centre for Australian Community Organisations and Management (CACOM) at the University of Technology, Sydney to develop estimates of the dimensions of the employing part of the non-profit sector. The estimates have been derived from a number of sources, mainly ABS industry surveys. They are presented in table S5.1 according to the strict definition of non-profit organisations favoured in the United States, omitting trading cooperatives and mutual finance organisations. More detailed data, including data on the wider social economy, are set out in *The Dimensions of Australia's Non-profit Sector*, published by the Australian Non-profit Data Project (ANDP) at the University of Technology, Sydney.

The two simplest measures of the non-profit sector's economic impact are the number of jobs it provides and the level of its expenditure, which gives some indication of the value of the services provided by non-profit organisations. In June 1996, non-profit organisations provided employment for almost 600,000 Australians. This represented 6.5% of the labour force and almost 12% of private employees. They spent over \$27b dollars. This compares with GDP for 1995–96 of around \$490b in current prices.

It can be seen that non-profit organisations in the education and research field are the largest part of the non-profit sector, both in terms of employment (137,000) and expenditure (\$6.6b). This is because it includes private schools which employed 77,000 and spent \$4.8b. Almost 30% of school pupils attend non-profit schools, the majority of them Catholic schools.

Non-profit organisations in the community services field are another important part of the non-profit sector, which is the largest provider of community services. Non-profits in the community services field include organisations that in Australia are commonly called charities, such as the Smith Family, Mission Australia, the St Vincent de Paul Society, World Vision and the Red Cross, but also many aged care providers, organisations providing services for people with disabilities, many child care providers and hundreds of small community organisations providing counselling and cash assistance to families in crisis, refugees to women escaping domestic violence and homeless people.

**S5.1 AUSTRALIA'S NON-PROFIT ORGANISATIONS, By Field of Activity—1995–96**

Field of activity	Operating expenditure(a) \$m	Number of employees(b) no.
Health	4 200	111 000
Education and research	6 600	137 000
Community services	3 700	132 000
Other human services (e.g. housing, legal services, employment services)	400	12 000
Religion	900	17 000
Arts and culture	400	5 000
Leisure (including sport, recreation and social clubs)	5 900	94 000
Interest organisations (including business, trade and professional associations, trade unions, political parties, lobby and advocacy organisations)	3 000	47 000
Other (including accommodation such as university colleges, school parent organisations, emergency service organisations, charitable trusts, etc.)	1 400	16 000
<b>Total</b>	<b>26 500</b>	<b>571 000</b>

(a) Rounded to nearest \$100 million. (b) Rounded to nearest 1,000 at the end June 1996.

Source: CACOM estimates based on published and unpublished ABS data.

Community services non-profits employ over 132,000 people. Many of these are employed part-time, and on low wages. For this reason, expenditure by community services non-profits, a significant \$3.7b, is nevertheless a lot smaller than would be suggested by comparing its employment with that of the education non-profits.

The effect of the high level of part-time employment in community services non-profits can also be seen when compared to non-profit organisations in the health field. At 111,000, employment by these non-profits is 21,000 less than that in community services non-profits, while their expenditure is half a billion dollars larger. The great bulk of non-profit employment in the health industry is provided by non-profit nursing homes and non-profit hospitals. Non-profits provide a significant minority of both nursing home and hospital beds. Another important set of non-profit organisations in the health field are those set up in response to various types of illnesses, or chronic conditions such as heart disease, HIV/AIDS, cancer, sudden infant death syndrome, and so on. These are sometimes set up by people suffering from the condition, their carers, or by doctors or medical researchers seeking better ways to treat or to cure the condition.

Non-profit organisations providing health, education, community and other human services are often referred to as public-serving non-profits. This is because they are mostly established to provide services for people who are not their members (self-help organisations, such as Alcoholics Anonymous, are the exception to this generalisation). Public-serving non-profits are contrasted with member-serving organisations, established primarily to serve the interests of their members. The latter are also an important part of the non-profit sector. They include religious organisations such as churches. Religious organisations serve their members' need for worship and instruction, though in doing so they provide a strong impetus to people to become involved in public-serving non-profits. Religious organisations employed 17,000 people and spent a little under \$900m in 1995–96.

Of greater importance than religious organisations for a larger number of Australians are social or registered clubs. These employed almost 63,000 people and spent \$4.3b in 1995–96. They were mostly begun after the Second World War by members of other non-profit organisations such as Returned

Services League Sub-branches and sporting clubs such as bowls, golf and football clubs, to provide more comfortable places for a drink and a meal than were available in most hotels or restaurants. Since then they have grown into major leisure facilities. Clubs in New South Wales led the way, helped for many years by the State Government giving them a monopoly on poker machines. In table S5.1 these are grouped with sporting associations and recreation clubs in the leisure field of activity.

Non-profit organisations are very important in sport and recreation activities. Almost all sporting clubs and associations are non-profit organisations. This is unlike the situation in many comparable countries where the major sporting clubs are privately owned. Non-profit recreation associations help people to collectively indulge their enthusiasms, from bushwalking to rose growing.

In culture and the arts, non-profit organisations are a mixture of member- and public-serving. At one level, non-profit organisations enable amateur thespians and chorists to engage in their art and, occasionally, to edify others. However, most of these are purely volunteer associations, and are not included in table S5.1. The economic impact of non-profit arts organisations comes mainly from the large performing arts companies such as the Australian Ballet or the Sydney Theatre Company. In addition, there are over 150 small non-profit organisations running community radio and television stations and a few non-profit libraries and museums. *Chapter 12, Culture and recreation* contains more information on this field of activity.

Interest groups are another important group of non-profits that mainly serve the interests of their members, but in doing so, arguably make a major contribution to the smooth operation of the economy and a major contribution to our democratic political system. This is another field of activity, like religion, where the constituent organisations are all non-profits. In June 1996 they employed 47,000 people, and they spent a little over \$3b in 1995–96. Included in this industry are political parties and trade unions; professional associations, such as medical colleges, bar associations, institutes of architects or chartered accountants; and business, trade or industry associations such as the Australasian Soft Drink Association or the Chatswood Chamber of Commerce, and their peak bodies such as the Australian Chamber of Commerce and Industry. Many other interest organisations,

such as the Combined Pensioners' Association or the Federation of Parents and Citizens Associations, are formed to advance the interests of their members who might be individuals or other non-profit organisations. Many other non-profit organisations are formed to advance the interests of other people or causes. These include Amnesty, the Australian Council of Social Service, the World Wide Fund for Nature and the Australian Conservation Foundation.

Non-profit organisations provide a range of services to educational institutions, such as canteen services and uniform shops at many schools (through parent associations), food services and other facilities to universities, through university unions, and accommodation through university colleges. A few are established to publish books or periodicals, often on religious themes. Some are established to help other non-profits by making grants or encouraging volunteering. Some of the former, such as the Myer and Potter Foundations, are endowed by funds left in a bequest; others, like various United Way organisations, raise money in order to distribute it. Many charitable trusts or foundations are too small to employ people; most are administered by trustee companies.

As noted earlier, non-profit organisations obtain their revenue from a variety of sources. Overall, the most important single source is the sale of the goods and services the organisation is established to provide. During 1995–96, revenue from this source totalled \$14b. The next most important source of revenue was government funding of \$8b. Finally, organisations raised \$5b from a variety of other sources, including gifts from the public, bequests, gifts and sponsorship from companies, and interest and rent from investments and from other commercial activity unrelated to the organisation's main purpose.

These highly aggregated data conceal considerable variation between non-profits in different fields of activity, and between non-profits in the same field. Some of the cause of this variation can be seen by an examination of government financial support for non-profit organisations. Overall, direct government support for non-profits contributes only 30% of their revenue. This is because most member-serving non-profits receive little government assistance. By and large, they are not considered to be providing a wider public benefit. Indeed, some of them play a major role

in government revenue raising, through government taxes on the gambling opportunities provided by registered clubs and racing clubs. Member-serving non-profits raise most of their revenue from sales and membership dues. However, churches are almost entirely dependent on donations from their members, while major sporting non-profits raise large amounts through corporate sponsorship.

By contrast, non-profit organisations in what are conventionally seen as the public-serving fields of health, education, community and other human services, are far more dependent on government funding. For non-profits in these fields, direct government support amounted to \$7.4b and comprised 49% of their revenue in 1995–96. Nonetheless, revenue from user fees is still important, totalling \$4.7b or 31% of all revenue. Revenue from user fees is particularly important to non-profit hospitals and private schools, but also to child care centres and aged care providers. Another source of revenue for these organisations is fundraising. This can take an extraordinary variety of forms, from street, mail and telephone appeals, to various special events such as fairs, fun runs, auction nights and theatre parties, to art unions and bingo nights. In 1995–96, fundraising revenue for these public-serving non-profits totalled \$1b. Other revenue also comes from commercial activities such as opportunity shops and investments.

## **Social and political impact**

In addition to making a significant contribution to Australia's economy, particularly its service economy, non-profit organisations play an important social and political role. This is easier to describe than to measure, partly because there are no simple measures for these roles, and partly because it is the very numerous but unsurveyed associations, which rely entirely on volunteers, that contribute so much to society and to the political system.

Non-profit organisations are a product of, and encourage, people's capacity to work together to provide a service for themselves or others or to represent their interests to others, including government. They are the organisational form chosen by people who want to share their enthusiasm for some recreational pursuit. As they are the main constituents of social movements, they are the organisational



form used by people who want to change society. They are the way ethnic minorities preserve and celebrate their cultural heritage. Belonging to particular non-profit organisations enables people to affirm their values and express their identity.

Non-profit organisations are an important component of what is coming to be called 'social capital', or the norms of trust and reciprocity, and the networks of groups and organisations that are their product but also reproduce them. The American political scientist, Robert Putnam, has claimed that a rich 'civic culture' is a prerequisite for a strong democratic political system and for continuing economic prosperity (Putnam, 1993). Other United States research has shown that people who belong to non-profit associations are far more likely to participate in the political process than are people who resemble them in other ways, but not in their membership of associations (e.g. Verba et al, 1995).

There is a concern in the United States and other parts of the Western world that formation and membership of voluntary associations are declining, with unfortunate long-term consequences. There are few Australian data on this issue, though it is clear that the membership of many associations is declining. In addition, in those States for which data are available, it is clear that the number of Australians who volunteer has declined over the last 15 years (Lyons and Fabiansson, 1998). In 1994–95, less than one in five Australians aged 15 or more did any voluntary work at all. Almost 60% of all volunteer hours were contributed by only 2.5% of the population, who volunteered on average for more than 300 hours over the year.

## Conclusion

The first non-profit organisations were formed in Australia between 1810 and 1819 during Macquarie's governorship. Australia proved a fertile ground for non-profit organisations, though the impetus for their growth was stronger at some times than others. Australia has a large non-profit sector, approximately equivalent to that in the United States, after adjusting for population size. However, there are now signs that the number of non-profit associations and people's involvement in them

might be shrinking. Those where membership is markedly declining include churches, political parties, trade unions, service clubs, scouts and guides. Membership in many local sporting associations seems to be declining, and smaller registered clubs are feeling the pressure of new commercial opportunities for gambling and socialising. With the exception of credit unions, most of those organisations in the finance industry that began as mutuals have been taken over by, or been converted to, for-profit firms.

The non-profit sector is an important part of Australia's economy, society and political system. It is inevitable that pressures for change operating within those wider formations will impact upon non-profit organisations; indeed some of these pressures spring directly from non-profits. It is clear that the non-profit sector is growing world-wide (Salamon, 1994). However, it is possible that the directions in which Australia is changing may, on balance, weaken the sector, with all of the regrettable consequences that, according to some research, will follow. However, it is just as possible that, as a further reaction to the pressures of globalisation, new local and national initiatives and movements will emerge, readjusting once again the profile of Australia's non-profit sector, while maintaining its central role as a demonstration of people's continuing ability to work together without the direction of government or the spur of profit.

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## Introduction

**T**ourism encompasses most short-term travel away from the normal place of work and residence, including travel undertaken for business and pleasure.

It is defined by the World Tourism Organisation (WTO) as: “the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes”.

This identifies ‘tourism’ as being more than just leisure travel. It also encompasses travel for business, health, education, religious and other reasons.

Tourism comprises both domestic and international travel. In an economic context, its effects are to generate economic activity and to transfer such activity between different parts of the economy. As it involves the consumption or purchase by tourists—or ‘visitors’ in the WTO terminology—of any good or service, its economic impact ranges over many sectors of the economy. The impact of tourism is most directly felt by sectors such as transport and tour operators, accommodation establishments, theme parks and attractions, entertainment and arts venues, museums and historical sites, restaurants, travel agents and souvenir retailers. However, other sectors also benefit both directly and indirectly from tourism demand.

Tourism also draws on services provided by the Commonwealth Government, the State and Territory Governments and local government organisations without direct charge to tourists. These include the construction and maintenance of roads, airports, harbours, railways and national parks, tourism promotion, immigration and customs services, information services and the provision of a large number of recreational facilities.

While tourism has been an economic factor in Australia for a very long time, in recent times it has grown to the extent that it is now recognised as a major contributor to total economic activity. In particular, international tourism has experienced substantial growth in the past decade or so. This has focused the need for improved standards of facilities and service, and has contributed to a recognition that tourism covers a sophisticated set of economic activities with great potential for future domestic and export earnings.

Because of Australia’s island status and distance from most of its international source markets, tourism in this country will continue to be dominated by domestic tourism for the foreseeable future. Despite high annual growth rates, international tourism still only accounts for around a quarter of total tourism activity. While international tourism is forecast to continue to enjoy significantly higher growth rates than domestic tourism, it will be well into the next century before it matches the level of activity of domestic tourism.

## Economic importance

It is estimated by the Bureau of Tourism Research that expenditure by visitors directly contributed 7.4% to Gross Domestic Product in 1995–96, and accounted directly for some 694,000 jobs (8.4% of total employment).

In 1995–96, domestic tourism expenditure was an estimated \$41.9b. In addition, \$4.6b was spent domestically by Australians prior to departure on overseas visits. In 1997, international tourism to Australia generated export earnings of \$16.3b (up 4.6% on 1996). This accounted for 13.1% of Australia’s total export earnings (14.0% in 1996) and 65.6% of services exports (66.0% in 1996).

While growth in tourism flows to Australia in the mid to late 1980s was at almost twice the international growth rate in tourism flows to all countries, Australia’s share of world tourism is still small, accounting for only around 0.5% of total international visitor arrivals in all countries. Because Australia is a long-haul destination for most international visitors, this share is never likely to be large. However, starting from a low base, there is still considerable potential for growth.

The number of international visitors to Australia increased at an average of 25% per year from 1984 to 1988. However, 1989 saw a 7.5% decrease in arrivals to 2.1 million, following the strong contributions of Expo 88 and the Bicentennial to the growth in 1988, but also reflecting the adverse impact of the disruption to domestic airline services caused by the airline pilots’ dispute in late 1989. Arrivals recovered by 6.5% to 2.2 million in 1990 and thereafter increased to new record levels of 2.4 million in 1991, growing by double digit rates in most years to reach 4.2 million by 1996. The number of arrivals in 1997 was 4.3 million, representing a growth rate of 3.7% over 1996. This relatively

modest growth compared with growth of 11.8% in 1996, reflected the serious economic problems in Asia.

The domestic travel market was relatively stagnant in the late 1980s and experienced an overall small downward trend in visitor nights during the early 1990s. Because of changes in survey methods, it is not possible to compare the figures for 1996 and 1997 with earlier figures. There was a slight increase (2%) in total domestic visitor nights between 1996 and 1997.

## Domestic tourism

In 1997, Australian residents, 15 years of age and over, spent a total of 257.5 million nights visiting other parts of the country (table 22.1). Each trip took an average of four nights, and each person in the population made an average of four trips

during the year. Residents of the Australian Capital Territory were the most frequent travellers (average of six trips), while residents of the Northern Territory tended to stay away for the longest period (average of six nights).

As table 22.2 shows, 'pleasure/holiday' was the main purpose of trip, accounting for the biggest proportion of visitor nights (41%), followed by 'visiting friends/relatives' (29%). 'Business' trips accounted for 14% of all visitor nights, while 'other' reasons accounted for 16%.

New South Wales was the most popular destination, accounting for nearly a third of all visitor nights (32%). Queensland was the next most popular destination, attracting nearly a quarter of all visitor nights (24%), while Victoria accounted for nearly a fifth of all visitor nights (19%).

### 22.1 SUMMARY OF PERSON TRIPS AND NIGHTS AWAY(a), By State/Territory of Origin—1997

State/Territory of origin	Estimated population as at 30 June 1997 '000(b)	Person trips '000	Average trips per person	Total nights away '000	Average nights away per person trip
New South Wales	4 959	21 451	4	83 777	4
Victoria	3 657	16 392	4	61 818	4
Queensland	2 660	11 969	5	50 840	4
South Australia	1 182	4 736	4	20 231	4
Western Australia	1 403	6 248	4	24 937	4
Tasmania	369	1 753	5	7 097	4
Northern Territory	137	473	3	2 640	6
Australian Capital Territory	243	1 559	6	6 110	4
<b>Australia</b>	<b>14 612</b>	<b>64 580</b>	<b>4</b>	<b>257 529</b>	<b>4</b>

(a) For persons aged 15 years and over. (b) Population aged 15 years and over.

Source: Domestic Tourism Monitor, Bureau of Tourism Research.

### 22.2 VISITOR NIGHTS(a), By State/Territory of Destination and Main Purpose of Trip—1997

State/Territory of destination	All business '000	Pleasure/holiday '000	Visiting friends/relatives '000	Other '000	Total '000
New South Wales	10 588	32 717	24 886	13 547	81 738
Victoria	5 047	20 625	15 549	8 787	50 008
Queensland	8 335	28 112	17 076	9 141	62 664
South Australia	2 508	7 342	5 483	2 762	18 095
Western Australia	5 637	10 247	6 154	3 576	25 614
Tasmania	1 100	3 635	2 231	1 169	8 135
Northern Territory	1 196	2 338	992	588	5 114
Australian Capital Territory	1 273	876	1 662	1 117	4 928
Other and not known	371	497	260	102	1 230
<b>Australia</b>	<b>36 055</b>	<b>106 390</b>	<b>74 293</b>	<b>40 791</b>	<b>257 529</b>

(a) By Australian residents, 15 years of age and over.

Source: Domestic Tourism Monitor, Bureau of Tourism Research.

As table 22.3 shows, in 1997 the most frequently used accommodation by domestic travellers was the house/flat of friends or relatives (43% of visitor nights), followed by hotels or motels with bathroom facilities (18%) and caravan parks or camping grounds (15%). A similar pattern occurred in New South Wales, Victoria, Queensland, Tasmania and the Australian Capital Territory. In South Australia and Western Australia, caravan parks or camping grounds were slightly more popular than hotels or motels with bathroom facilities. In the Northern Territory, caravan parks or camping grounds were the most frequently used accommodation, accounting for 29% of visitor nights.

Intrastate visits account for the majority of total domestic tourism visitor nights (61%). They are a particularly important component of domestic tourism for Western Australia and Victoria, where 75% and 68% respectively of domestic visitor nights in the State are accounted for by residents of the State (table 22.4).

In terms of numbers of visitor nights, net beneficiaries from domestic tourism (i.e. where inbound interstate visitor nights are greater than outbound interstate visitor nights) are Queensland, Western Australia, Tasmania and the Northern Territory. While Queensland is the biggest relative net beneficiary, with 1.7 times as many inbound nights as outbound nights, Victoria is the biggest relative net contributor, with 1.7 times as many outbound nights as inbound nights.

### 22.3 VISITOR NIGHTS, Type of Accommodation Used by State/Territory—1997

	State/Territory									
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other and not known	Aust.
Accommodation type	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
Hotel/motel with facilities	14 587	7 945	12 093	2 392	4 009	1 926	1 398	1 225	120	45 695
Hotel/motel without facilities	1 564	806	1 435	526	581	273	297	52	0	5 534
Guest house/private hotel	1 694	894	1 257	205	587	264	65	133	0	5 099
Caravan/tent/cabin/camping	12 075	7 590	7 541	3 199	4 703	1 115	1 468	268	90	38 049
Rented house/flat	5 836	3 057	7 015	940	1 831	419	220	389	0	19 707
Friends'/relatives' house/flat	36 244	23 386	26 082	7 713	9 537	3 113	1 225	2 533	8	109 841
Own holiday house/flat	3 415	3 717	2 261	1 288	1 393	401	0	53	0	12 527
Farm	1 671	526	1 224	552	920	62	2	0	14	4 972
Boat/cabin cruiser	357	225	309	226	43	75	36	0	85	1 356
Hostel	1 131	343	711	161	572	125	29	13	5	3 091
Other/not stated	3 166	1 518	2 734	892	1 437	362	376	263	908	11 656
<b>Total</b>	<b>81 739</b>	<b>50 008</b>	<b>62 663</b>	<b>18 094</b>	<b>25 614</b>	<b>8 136</b>	<b>5 115</b>	<b>4 928</b>	<b>1 231</b>	<b>257 529</b>

Source: Domestic Tourism Monitor, Bureau of Tourism Research.

### 22.4 VISITOR NIGHTS, By State/Territory of Origin and States/Territories Visited—1997

	State/Territory visited									
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other and not known	Aust.
State/Territory of origin	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
New South Wales	53 195	6 752	13 977	1 782	2 304	1 400	966	2 804	598	83 777
Victoria	10 767	34 092	9 031	2 916	1 536	1 465	946	900	165	61 818
Queensland	9 248	2 713	34 719	1 062	1 143	564	653	546	192	50 840
South Australia	2 065	3 100	1 835	10 719	907	288	837	390	90	20 231
Western Australia	1 479	1 575	998	646	19 148	366	501	131	94	24 937
Tasmania	785	847	871	245	263	3 798	167	98	24	7 097
Northern Territory	166	330	460	394	199	5	1 009	32	45	2 640
Australian Capital Territory	4 034	600	772	330	115	250	37	26	26	6 190
<b>Australia</b>	<b>81 739</b>	<b>50 008</b>	<b>62 663</b>	<b>18 094</b>	<b>25 614</b>	<b>8 136</b>	<b>5 115</b>	<b>4 928</b>	<b>1 231</b>	<b>257 529</b>

Source: Domestic Tourism Monitor, Bureau of Tourism Research.

## International inbound tourism

### Characteristics

In 1997, the number of international visitors to Australia grew weakly relative to the high growth rates experienced earlier in the decade. The total number of visitors in 1997 was 4,317,900, representing an increase of 3.7% on 1996, compared to growth rates of over 10% for each of the previous four years (table 22.5).

**22.5 INBOUND VISITORS**

Year	Visitors	Change(a)
	no.	%
1991	2 370 400	7.0
1992	2 603 300	9.8
1993	2 996 200	15.1
1994	3 361 700	12.2
1995	3 725 800	10.8
1996	4 164 800	11.8
1997	4 317 900	3.7

(a) From previous year.

Source: Overseas Arrivals and Departures, Australia (3401.0).

The range of countries which are significant sources of visitors is narrowing slightly, with significant falls in the growth rate of visitors from New Zealand and many Asian countries including Korea, Malaysia and Indonesia. The number of visitors from Taiwan and Hong Kong actually fell in 1997 (by 4% and 1% respectively) compared with 1996 (table 22.6). The UK growth rate increased by 12% in 1997, while the more traditional source countries of 'Other Europe' and the USA are growing at about the same rate as in 1996 (10% and 4% respectively in 1997).

Japan continues to be Australia's most important market, accounting for 19% of total inbound visitors in 1997. This was followed by New Zealand (16%), the United Kingdom (10%) and 'Other Europe' (8%).

The largest category of international visitors during 1997 was those arriving for 'holiday' purposes, accounting for 59% of all visitor arrivals. In addition to these visitors, another 19% arrived for the purpose of 'visiting friends/relatives'. About 10% arrived for 'business' purposes or to attend a 'convention/conference'.

**22.6 INBOUND VISITORS, By Country/Region of Residence and Main Purpose of Trip—1997**

Country/region of residence	Main purpose of trip							Total visitors	Change on 1996
	Convention/conference	Business	Visiting friends/relatives	Holiday	Employment	Education	Other and not stated		
	'000	'000	'000	'000	'000	'000	'000	no.	%
New Zealand	20.2	104.7	199.3	311.0	6.9	3.8	39.7	685.7	2.1
Other Oceania	4.3	10.2	24.3	49.2	0.7	6.2	22.0	117.0	1.9
Germany	2.3	9.1	21.1	89.3	0.5	2.5	4.2	128.9	2.8
United Kingdom	6.4	36.0	174.7	167.4	7.3	2.0	16.8	410.6	11.7
Other Europe	14.9	31.9	81.6	172.5	3.7	8.5	21.6	334.7	9.5
Indonesia	3.5	9.6	18.1	95.5	0.8	20.0	13.0	160.4	3.8
Malaysia	4.6	8.6	24.1	88.8	0.3	11.5	5.8	143.7	6.9
Singapore	4.3	23.1	26.5	167.9	0.5	9.4	7.7	239.3	7.4
Hong Kong	3.1	15.7	32.4	81.0	0.2	13.4	6.0	151.7	-1.0
Japan	4.8	32.2	15.2	723.6	0.7	12.5	24.9	813.9	0.1
Korea	4.8	10.9	16.8	175.2	0.3	14.3	11.5	233.8	2.6
Taiwan	1.6	7.0	8.9	114.7	0.1	6.6	14.3	153.2	-3.9
Other Asia	13.3	41.9	47.1	85.8	1.9	17.9	23.9	231.8	2.5
USA	16.2	75.7	67.4	138.1	2.6	10.0	19.5	329.6	4.0
Other America	4.7	9.3	27.3	39.1	1.2	3.2	5.7	90.5	7.2
Middle East and North Africa	1.6	3.4	12.8	14.1	0.2	0.7	3.4	36.1	11.2
Other Africa	2.0	6.7	19.9	21.3	0.5	1.0	4.9	56.2	6.0
Not stated	0.0	0.1	0.2	0.2	0.0	0.0	0.3	0.8	35.5
<b>Total</b>	<b>112.6</b>	<b>436.1</b>	<b>817.6</b>	<b>2 534.5</b>	<b>28.6</b>	<b>143.5</b>	<b>245.0</b>	<b>4 317.9</b>	<b>3.7</b>

Source: Overseas Arrivals and Departures, Australia (3401.0).

**22.7 INBOUND VISITORS, By Intended Length of Stay and Main Purpose of Trip—1997**

	Main purpose of trip								Proportion of total
	Convention/ conference	Business	Visiting friends/ relatives	Holiday	Employ- ment	Education	Other and not stated	Total visitors	
Intended length of stay	'000	'000	'000	'000	'000	'000	'000	'000	%
Under 1 week	38.6	202.6	88.9	944.2	3.2	5.1	80.7	1 363.2	31.6
1 week and under 2 weeks	51.5	124.2	163.8	858.2	1.8	10.5	93.1	1 303.2	30.2
2 weeks and under 1 month	18.9	56.8	254.4	424.0	1.8	9.4	28.5	793.7	18.4
1 month and under 2 months	2.6	22.1	167.0	163.9	2.3	7.7	13.8	379.5	8.8
2 months and under 3 months	0.5	9.3	53.1	45.4	1.6	9.4	4.8	124.0	2.9
3 months and under 6 months	0.4	14.1	61.8	49.9	4.2	27.8	9.3	167.4	3.9
6 months and under 12 months	0.2	7.0	28.6	49.0	13.8	73.6	14.7	186.9	4.3
<b>Total</b>	<b>112.6</b>	<b>436.1</b>	<b>817.6</b>	<b>2 534.5</b>	<b>28.6</b>	<b>143.5</b>	<b>245.0</b>	<b>4 317.9</b>	<b>100.0</b>

Source: *Overseas Arrivals and Departures, Australia (3401.0)*.

For most 'main purpose of trip' categories, New Zealand was the main source of visitors. The exceptions were 'holiday' visitors, where Japan provided 29% of all such visitors, and 'education' visitors, where Indonesia was the source of 14% of all such arrivals.

'Holiday' visitors were the largest category of visitors from almost all source countries/regions. The exception was the United Kingdom, for which 'visiting friends/relatives' was the largest purpose category (43%).

The long distances most international visitors have to travel to Australia contribute to a relatively long stay in this country. In 1997, 38% of visitors stayed for more than two weeks, while almost 20% stayed for more than a month (table 22.7). The relatively high number of visitors who are visiting friends or relatives

(nearly 70% of whom stayed for more than two weeks) also contributed to the relatively long stay. Visitors arriving for 'education' purposes also tend to be long stayers, but their numbers are relatively small.

Visitor arrivals are only slightly seasonal, with arrival numbers in each month falling into a fairly narrow range. In 1997, most arrivals were in December, with 10% of total arrivals, while fewest arrivals were in May, with just under 7% of total arrivals (table 22.8). Outside December and May, the proportions of total arrivals ranged between 7% and 9%. A number of factors contribute to the relative lack of seasonality, primarily the attractive climate in many parts of the country throughout the whole year, and the wide diversity of source countries of visitors to Australia.

**22.8 INBOUND VISITORS, By Month and Main Purpose of Trip—1997**

Month	Main purpose of trip							Total visitors	Proportion of total
	Convention/ conference	Business	Visiting friends/ relatives	Holiday	Employment	Education	Other and not stated		
	'000	'000	'000	'000	'000	'000	'000	'000	%
January	5.4	28.7	62.7	199.2	3.2	23.1	20.6	342.9	7.9
February	6.3	38.4	61.9	253.6	1.8	26.9	19.1	408.0	9.4
March	10.3	37.8	74.5	236.5	2.3	10.1	19.4	390.9	9.1
April	8.7	38.0	60.2	187.5	2.1	9.6	19.8	325.9	7.5
May	9.6	38.2	45.7	170.0	1.7	5.1	18.8	289.1	6.7
June	13.8	33.8	55.1	176.8	2.6	8.0	17.9	308.2	7.1
July	11.6	36.3	65.3	227.8	2.4	29.4	24.5	397.4	9.2
August	7.9	36.7	53.8	202.5	2.5	7.6	19.4	330.4	7.7
September	11.2	37.2	62.5	189.1	2.4	6.7	21.9	330.9	7.7
October	11.7	39.4	69.3	212.0	2.5	9.2	22.3	366.5	8.5
November	12.5	43.3	74.3	220.3	2.8	4.2	21.9	379.5	8.8
December	3.5	28.2	132.3	259.2	2.1	3.6	19.4	448.3	10.4
<b>Total</b>	<b>112.6</b>	<b>436.1</b>	<b>817.6</b>	<b>2 534.5</b>	<b>28.6</b>	<b>143.5</b>	<b>245.0</b>	<b>4 317.9</b>	<b>100.0</b>

Source: Overseas Arrivals and Departures, Australia (3401.0).

**22.9 INBOUND VISITOR NIGHTS, By State/Territory and Main Purpose of Trip—1997**

State/Territory	Main purpose of trip				Total	Total
	Business	Visiting friends/relatives	Holiday	All other reasons		
	'000	'000	'000	'000	'000	%
New South Wales	2 114	6 585	12 577	11 116	32 392	35.4
Victoria	1 391	5 355	4 336	6 963	18 045	19.7
Queensland	611	4 422	11 931	4 112	21 077	23.1
South Australia	256	1 033	1 323	1 334	3 946	4.3
Western Australia	357	2 607	3 124	3 626	9 714	10.6
Tasmania	73	396	552	509	1 531	1.7
Northern Territory	187	245	1 951	337	2 721	3.0
Australian Capital Territory	136	187	430	1 228	1 980	2.2
<b>Australia</b>	<b>5 125</b>	<b>20 831</b>	<b>36 225</b>	<b>29 225</b>	<b>91 405</b>	<b>100.0</b>

Source: International Visitor Survey, Bureau of Tourism Research.

New South Wales is by far the most popular State for all categories of international visitors. In 1997, 35% of all nights spent by international visitors were spent in New South Wales (down from 39% in 1996). Queensland was the next most popular State, accounting for 23% of all international visitor nights. Victoria accounted for 20% (up from 17% in 1996) and Western Australia 11% of international visitor nights. Tasmania was the least popular State or Territory, accounting for less than 2% of international visitor nights in 1997 (table 22.9).

## Expenditure

In 1997, international visitors to Australia each spent an average of \$3,758 on their trip. Not surprisingly, because of their expenditure on the long distance travel to and from Australia, the highest spenders tended to be visitors from Europe and North America. The highest spenders were visitors from the USA, who each spent an average of \$5,067. The lowest average expenditure, \$1,931 per visitor, was by visitors from New Zealand (table 22.10).



**22.10 AVERAGE VISITOR EXPENDITURE, By Country/Region of Residence and Expenditure Item—1997**

Country/region of residence	Items of expenditure								Total
	Package tours	Prepaid international airfares	Transport	Food, drink and accommodation	Shopping	Entertainment and gambling	Capital goods	Other	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
New Zealand	275	486	131	463	367	50	101	59	1 931
Germany	1 549	1 400	427	1 043	283	61	81	90	4 933
United Kingdom	780	1 730	334	909	282	90	49	125	4 299
Other Europe	1 144	1 561	381	1 107	366	103	51	184	4 897
Indonesia	387	581	180	756	601	546	140	957	4 149
Malaysia	399	616	188	791	618	356	229	860	4 057
Singapore	515	555	160	533	487	136	70	500	2 957
Hong Kong	721	778	252	834	531	179	533	814	4 642
Japan	2 189	246	76	301	674	63	7	97	3 651
Korea	1 300	326	142	593	491	116	39	639	3 647
Taiwan	1 610	389	121	518	710	100	66	561	4 076
Thailand	504	561	201	781	665	481	60	870	4 123
China	431	1 060	304	1 026	571	186	205	510	4 291
Other Asia	235	961	235	737	531	91	61	781	3 632
USA	1 169	1 927	303	960	300	82	33	291	5 067
Canada	803	1 784	354	1 114	362	110	42	193	4 763
Other countries	286	1 162	190	583	538	67	252	272	3 348
<b>All countries</b>	<b>1 026</b>	<b>873</b>	<b>206</b>	<b>666</b>	<b>477</b>	<b>117</b>	<b>89</b>	<b>306</b>	<b>3 758</b>

Source: International Visitor Survey, Bureau of Tourism Research.

After paying for package tours and prepaid international airfares, expenditure on food, drink and accommodation was the next major expenditure item, averaging \$666 per visitor. High spenders on food, drink and accommodation tended to be from Europe and North America, while visitors from Asian countries tended to be the highest spenders on shopping. Visitors from Taiwan (\$710) recorded the highest average expenditure on shopping, followed by Japan (\$674) and Thailand (\$665).

Persons visiting for 'other' reasons (e.g. education, employment, health) were the highest spenders on average, followed by business visitors. Relatively high expenditure on prepaid international airfares and food, drink and accommodation contributed to an overall high average expenditure by business visitors and those visiting for 'other' reasons. Persons visiting for 'other' reasons were also the highest spenders on shopping (table 22.11).

**22.11 AVERAGE VISITOR EXPENDITURE, By Expenditure item and Main Purpose of Trip—1997**

Expenditure items	Main purpose of trip				Total
	Business	Visiting friends and relatives	Holiday	All other reasons	
	\$	\$	\$	\$	\$
Package tours	283	224	1 536	500	1 026
Prepaid international airfares	1 825	1 237	537	1 059	873
Transport	224	171	167	411	206
Food, drink and accommodation	999	404	517	1 460	666
Shopping	327	426	509	536	477
Entertainment and gambling	76	63	118	222	117
Capital goods	114	103	45	251	89
Other	160	109	64	1 845	306
<b>All items</b>	<b>4 009</b>	<b>2 737</b>	<b>3 491</b>	<b>6 281</b>	<b>3 758</b>

Source: International Visitor Survey, Bureau of Tourism Research.

## Inbound tour operators

Of the total 2.4 million overseas 'holiday' visitors who arrived in Australia during 1995–96, inbound tour operators handled 1.6 million (68%). These overseas visitors coming to Australia on package tours paid a total of \$1.4b to Australian inbound tour operators for the Australian content of their tour.

Passengers from Japan accounted for 42% of the total passengers involved and 56% of the total value of gross invoices (i.e. all amounts received for ground content, e.g. coach transfers, accommodation, meals, cruises, etc., received in Australia). Passengers from Asia (excluding Japan) represented 33% of total passengers and accounted for 21% of the total value of gross invoices.

Europe (including the United Kingdom and Ireland) accounted for 14% of passengers and 14% of the total value of gross invoices, the Americas for 7% of passengers and 8% of the total value of gross invoices, and New Zealand and the South Pacific for 3% of passengers and 1% of the total value of gross invoices.

At 30 June 1996, inbound tour operators employed 3,000 persons full-time and 720 persons part-time in Australia. In addition, they employed 410 persons full-time overseas.

## Australia's tourism marketing expenditure overseas

During 1996–97, Australian tourism-related organisations (excluding the Australian Tourist Commission) spent \$280m marketing their products overseas. Of this total expenditure, 29% was directed towards the Japanese market, 27% towards other Asian countries, 20% towards the United Kingdom and Europe and 15% towards the United States and Canada.

Of total tourism marketing expenditure overseas, the majority (69%) was independent expenditure, while 17% was spent in cooperation with the Australian Tourist Commission and 14% was in cooperation with other organisations.

Of the total expenditure, 23% was by inbound tour operators, 18% by accommodation operators, 13% by State tourism authorities and 5% by regional tourist bodies. Other operators

(including airlines, exhibition organisers, incentive travel operators and professional conference organisers) accounted for 30% of total tourism marketing expenditure overseas.

## International outbound tourism

While the number of foreign visitors coming to Australia has grown rapidly in recent years, the number of Australian residents visiting overseas has also been increasing (table 22.12). Until 1996 the annual percentage increase in Australians visiting overseas was smaller than the increase in visitor arrivals. However, in 1997 the percentage increase in Australians travelling abroad was greater than the increase in international visitors coming to Australia (7% compared to 4%). Nevertheless, the number of inbound visitors was still higher than the number of outbound visitors by 1,385,100 persons. Consequently, tourism continues to improve the net contribution of the travel item to Australia's balance on current account.

**22.12 AUSTRALIAN RESIDENTS TRAVELLING ABROAD**

Year	no.	Change
		%
1991	2 099 400	-3.2
1992	2 276 300	8.4
1993	2 267 100	-0.4
1994	2 354 300	3.8
1995	2 518 600	7.0
1996	2 732 000	8.5
1997	2 932 800	7.3

Source: *Overseas Arrivals and Departures, Australia* (3401.0).

Australians travel abroad to visit a wide variety of main destinations. As table 22.13 shows, the most popular main destination is New Zealand, accounting for 14% of Australian residents visiting abroad in 1997. This was followed by the United States, the main destination for over 12% of Australian residents visiting abroad, and the United Kingdom the main destination for nearly 11%. In Asia, Indonesia was the most popular main destination country (11%), while other Australian visitors to Asia chose a wide variety of countries as their main destination.

**22.13 AUSTRALIANS TRAVELLING ABROAD, By Country/Region of Main Destination and Main Purpose of Trip—1997**

Country/region of main destination	Main purpose of trip							Total	Change on 1996
	Convention/ conference	Business	Visiting friends/ relatives	Holiday	Employment	Education	Other and not stated		
	'000	'000	'000	'000	'000	'000	'000	'000	%
Fiji	2.3	6.1	12.3	51.0	0.8	0.6	2.9	76.0	5.7
New Zealand	16.4	89.6	134.4	142.1	5.3	3.6	15.5	406.9	-1.9
Other Oceania	2.6	24.2	14.1	68.6	16.0	2.6	4.4	132.4	14.1
Italy	2.3	6.3	17.2	32.6	0.3	1.6	2.2	62.5	7.4
United Kingdom	6.6	32.4	98.9	165.2	7.2	2.1	10.0	322.3	11.5
Other Europe	10.0	30.1	89.4	105.2	3.1	5.0	11.5	254.3	5.5
Indonesia	6.1	37.9	13.8	237.3	4.7	3.7	7.2	310.7	19.6
Malaysia	3.7	28.8	21.4	35.4	4.0	0.7	4.3	98.4	1.3
Philippines	2.0	12.1	24.1	17.9	0.8	0.4	3.2	60.4	7.6
Singapore	6.4	33.6	15.7	39.1	5.2	1.0	4.2	105.1	6.0
Thailand	2.7	12.5	7.7	61.1	1.6	0.8	2.7	89.1	10.0
China	2.2	20.9	17.1	25.8	1.7	2.1	2.5	72.3	32.0
Hong Kong	4.2	43.3	41.1	51.5	8.6	1.6	5.9	156.2	-6.9
Other Asia	5.3	52.2	80.2	68.2	7.0	6.7	9.4	229.1	11.0
USA	31.1	70.3	51.1	179.4	4.0	6.0	10.1	352.0	6.3
Other America	4.6	8.1	22.2	36.3	1.1	2.0	2.8	77.1	12.4
Middle East and North Africa	1.5	5.9	24.9	27.0	3.1	0.8	5.1	68.3	13.2
Other Africa	3.0	8.8	11.4	24.8	1.2	0.7	3.1	53.1	12.8
Not stated	0.1	0.5	0.4	4.1	1.2	0.0	0.4	6.5	-42.9
<b>Total</b>	<b>113.0</b>	<b>523.6</b>	<b>697.4</b>	<b>1 372.6</b>	<b>76.9</b>	<b>41.8</b>	<b>107.4</b>	<b>2 932.8</b>	<b>7.3</b>

Source: Overseas Arrivals and Departures, Australia (3401.0).

Nearly a half (47%) of Australian residents visiting abroad in 1997 went for 'holiday' purposes, while a further 24% went to 'visit friends/relatives'. For all destination countries/regions, the largest category of Australian visitors was 'holiday', except in the Philippines and 'Other Asia' where 'visiting friends/relatives' was the largest category. Other destinations which attracted a relatively high proportion of Australians 'visiting friends/relatives' were Middle East/North Africa, 'Other Europe', New Zealand, the United Kingdom and Italy.

Australians travelling for 'business' purposes accounted for 18% of Australian outbound travellers. Their main destinations were New Zealand, the United States, 'Other Asia' and Hong Kong.

The long distances for Australian residents travelling to other countries are reflected in the relatively long periods of stay abroad. In 1997, only 12% stayed abroad less than a week, while 37% stayed away for over a month (table 22.14). In addition to distances involved in getting to destination countries, the high proportion of Australians 'visiting friends/relatives' also contributed to long periods of stay, as such travellers traditionally tend to stay in destination countries longer than other types of visitors. In 1997, 56% of such visitors stayed away for over a month.

While the number of Australian residents departing for visits abroad varies from month to month, there are not large seasonal fluctuations in departures. Table 22.15 shows that the largest numbers of departures in 1997 were in September and December (both 10%), whereas February recorded the lowest number of departures (6%).

**22.14 AUSTRALIANS TRAVELLING ABROAD, Intended Length of Stay and Main Purpose of Trip—1997**

	Main purpose of trip							Total	Proportion of total
	Convention/ conference	Business	Visiting friends/ relatives	Holiday	Employ- ment	Education	Other and not stated		
Intended length of stay	'000	'000	'000	'000	'000	'000	'000	'000	%
Under 1 week	26.9	167.1	38.1	86.8	5.1	3.5	12.0	339.5	11.6
1 week and under 2 weeks	46.1	142.4	90.0	437.6	5.2	8.8	21.9	752.0	25.6
2 weeks and under 1 month	29.6	105.1	178.5	401.8	10.5	9.5	24.2	759.1	25.9
1 month and under 2 months	8.1	48.0	196.8	256.6	9.7	3.6	16.5	539.3	18.4
2 months and under 3 months	1.2	22.6	82.0	87.0	7.3	2.2	8.2	210.3	7.2
3 months and under 6 months	0.8	22.1	74.2	62.5	11.4	3.9	9.7	184.6	6.3
6 months and under 12 months	0.2	16.4	37.8	40.3	27.8	10.5	15.1	147.9	5.0
<b>Total</b>	<b>113.0</b>	<b>523.7</b>	<b>697.4</b>	<b>1 372.6</b>	<b>76.9</b>	<b>41.8</b>	<b>107.4</b>	<b>2 932.8</b>	<b>100.0</b>

Source: Overseas Arrivals and Departures, Australia (3401.0).

**22.15 AUSTRALIANS TRAVELLING ABROAD, By Month of Departure and Main Purpose of Trip—1997**

	Main purpose of trip							Total	Proportion of total
	Convention/ conference	Business	Visiting friends/ relatives	Holiday	Employment	Education	Other and not stated		
Month	'000	'000	'000	'000	'000	'000	'000	'000	%
January	5.1	40.0	44.4	84.5	7.8	4.7	7.8	194.4	6.6
February	6.5	43.0	40.7	74.2	6.7	1.7	7.5	180.2	6.1
March	10.2	44.9	62.8	114.0	6.1	2.7	9.8	250.4	8.5
April	10.7	47.1	44.6	92.3	6.3	2.7	9.0	212.7	7.3
May	13.3	46.1	60.0	113.5	6.4	1.9	10.1	251.3	8.6
June	8.9	44.2	71.7	134.8	6.3	3.5	10.9	280.2	9.6
July	8.8	40.9	59.0	122.5	6.2	2.9	9.1	249.3	8.5
August	11.1	47.4	44.7	117.7	6.6	4.2	8.4	240.0	8.2
September	12.4	48.9	57.6	160.4	6.7	8.6	9.7	304.2	10.4
October	12.0	47.6	46.8	114.5	6.2	2.6	7.2	236.9	8.1
November	10.7	48.1	58.4	97.5	6.0	3.5	8.2	232.5	7.9
December	3.4	25.5	106.8	146.7	5.7	2.9	9.8	300.7	10.3
<b>Total</b>	<b>113.0</b>	<b>523.6</b>	<b>697.4</b>	<b>1 372.6</b>	<b>76.9</b>	<b>41.8</b>	<b>107.4</b>	<b>2 932.8</b>	<b>100.0</b>

Source: Overseas Arrivals and Departures, Australia (3401.0).

## Tourist accommodation

Estimates of the origin of guests staying in hotels, motels and guest houses in Australia during 1994–95 indicate that overseas visitors accounted for 23% of room nights occupied in these establishments. This compares with 37% for interstate visitors and 40% for intrastate visitors (see table 22.16).

Queensland and the Northern Territory had the highest proportions of overseas visitor nights to total visitor nights, each having 29%. Next highest were New South Wales with 25% and Western Australia with 20%, followed by Victoria (17%), the Australian Capital Territory (13%), South Australia (12%) and Tasmania (8%). The strong popularity of New South Wales and Queensland is reflected in the fact that 70% of overseas guest nights in hotels, motels and guest houses were spent in these States.

The Australian Capital Territory, Tasmania and the Northern Territory were the most dependent on interstate visitors, who accounted for a half or more of those guest nights. At the other end of the scale, in New South Wales and Queensland, interstate visitors accounted for only a third of total guest nights in hotels, motels and guest houses.

As shown in table 22.17, at December 1997 there were 180,797 rooms available in Australia in hotels, motels and guest houses with facilities (i.e. with bathroom facilities in most rooms). This was an increase of 4% over the number available at December 1996. The number of holiday flats, units and houses available for short-term letting increased by 4% (to 43,883) over the same period. At December 1997, there were 32,504 beds available in visitor hostels (providing inexpensive accommodation for backpackers) in Australia, an increase of 8% over December 1996. The capacity of caravan parks in Australia remained virtually unchanged over this period.

During 1997, the supply of hotel, motel and guest house accommodation in Australia exceeded demand (the number of room nights occupied), which rose by slightly less than 1%. For holiday flats/units, the increase in supply was also greater than the increase in demand, resulting in a small fall in the annual occupancy rate of 1 percentage point. For caravan parks, occupancy (the number of site nights occupied) increased slightly (by 0.7%). For visitor hostels, the increase in supply (8%) was less than the increase in demand as measured by the number of guest nights (12%), resulting in an increase in the annual bed occupancy rate of 0.5 percentage points.

**22.16 ORIGIN OF GUESTS STAYING IN HOTELS, MOTELS AND GUEST HOUSES WITH FACILITIES—1994–95**

State/Territory	Origin of guests			Total
	Intrastate	Interstate	Overseas	
	'000	'000	'000	'000
New South Wales	5 076	3 949	2 963	11 988
Victoria	2 511	2 158	986	5 655
Queensland	3 616	3 054	2 715	9 385
South Australia	845	902	233	1 980
Western Australia	1 425	1 128	643	3 196
Tasmania	326	638	89	1 053
Northern Territory	241	576	332	1 149
Australian Capital Territory	36	706	110	852
<b>Total</b>	<b>14 076</b>	<b>13 111</b>	<b>8 071</b>	<b>35 258</b>

Source: *Experimental Estimates of the Origin of Guests, Hotels, Motels and Guest Houses, Australia, 1994–95 (9501.0)*.

## 22.17 TOURIST ACCOMMODATION(a)—1997

		Quarter ended				Year ended December 1997
Accommodation Type	Unit	March	June	September	December	
LICENSED HOTELS WITH FACILITIES(b)						
Establishments	no.	1 145	1 149	1 163	1 170	1 170
Guest rooms	no.	71 810	72 339	73 784	74 946	74 946
Bed spaces	no.	192 481	194 630	198 304	202 855	202 855
Room occupancy rates	%	63.6	58.8	62.0	63.2	61.9
Bed occupancy rates	%	40.0	34.9	38.5	38.6	38.0
Gross takings from accommodation	\$'000	527 267	486 847	531 603	566 090	2 111 808
MOTELS AND GUEST HOUSES WITH FACILITIES(b)						
Establishments	no.	3 768	3 778	3 877	3 871	3 871
Guest rooms	no.	102 860	103 508	105 249	105 851	105 851
Bed spaces	no.	313 751	316 107	321 585	323 315	323 315
Room occupancy rates	%	55.2	51.6	55.2	54.7	54.2
Bed occupancy rates	%	33.7	29.7	32.7	32.7	32.2
Gross takings from accommodation	\$'000	396 126	366 339	418 076	413 093	1 593 634
TOTAL HOTELS, MOTELS ETC.(b)						
Establishments	no.	4 913	4 927	5 040	5 041	5 041
Guest rooms	no.	174 670	175 847	179 033	180 797	180 797
Bed spaces	no.	506 232	510 737	519 889	526 170	526 170
Room occupancy rates	%	58.6	54.6	58.0	58.2	57.4
Bed occupancy rates	%	36.1	31.7	34.9	35.0	34.4
Room nights occupied	'000	9 194	8 699	9 521	9 641	37 055
Gross takings from accommodation	\$'000	923 394	853 186	949 679	979 184	3 705 442
CARAVAN PARKS(c)						
Establishments	no.	2 701	2 693	2 692	2 685	2 685
Powered sites(d)	no.	203 131	202 274	202 134	201 753	201 753
Unpowered sites	no.	66 257	66 310	65 496	65 124	65 124
Cabins, flats etc.	no.	18 838	19 033	19 491	19 863	19 863
Total capacity	no.	288 226	287 617	287 121	286 740	286 740
Site occupancy rates(e)	%	46.8	43.0	44.8	43.7	44.6
Site nights occupied	'000	12 142	11 264	11 815	11 533	46 753
Gross takings from accommodation	\$'000	139 165	114 977	129 234	134 099	517 474
HOLIDAY FLATS, UNITS AND HOUSES(b)						
Flats, units etc.						
One bedroom	no.	9 188	9 318	9 476	9 909	9 909
Multiple bedroom	no.	33 009	32 445	32 720	33 974	33 974
Total flats, units etc.	no.	42 197	41 763	42 196	43 883	43 883
Bed spaces	no.	185 017	182 807	184 819	192 700	192 700
Unit occupancy rates	%	56.4	43.4	54.9	53.2	52.0
Unit nights occupied	'000	2 139	1 643	2 132	2 144	8 058
Gross takings from accommodation	\$'000	163 742	114 893	150 104	165 040	593 779
VISITOR HOSTELS(f)						
Establishments	no.	494	494	499	500	500
Bed spaces	no.	32 161	31 797	32 065	32 504	32 504
Bed occupancy rates	%	47.8	44.4	46.1	48.3	46.6
Guest nights	'000	1 366	1 279	1 355	1 435	5 434
Gross takings from accommodation	\$'000	19 178	18 204	19 748	20 911	78 041

(a) A tourist accommodation establishment is defined as an establishment which predominantly provides short-term accommodation (i.e. for periods of less than two months) available to the general public. (b) For definitions see Tourist Accommodation, Australia, December quarter 1997 (8635.0). (c) Includes long-term caravan parks. (d) Includes on-site vans. (e) Caravan park sites etc. permanently reserved but only casually occupied by their tenants have been recorded continuously as site nights occupied irrespective of whether the tenants of individual sites were in residence on any particular night. (f) 'Backpacker' accommodation.

Source: Tourist Accommodation, Australia, December quarter 1997 (8635.0).

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## Introduction

Transport can be described broadly as the movement of goods or persons from an origin to a destination. It is one of the most fundamental aspects of an advanced economy. Buildings cannot be constructed without transportation of materials and persons, food must be transported from farms to shops, and persons must travel to get to and from work, recreation and other facilities. Transport has enormous economic and social impact, generates substantial employment and contributes significantly to Gross Domestic Product, with numerous support industries ranging from automotive manufacturers to travel agencies. There are also social costs of transport—such as road accidents, traffic congestion, fuel emissions, aircraft noise pollution and shipping oil spills. Information about all aspects of transport and its support industries is vital to effective planning by governments and industry.

## Road transport

### Length of the road system

The most recent information available on lengths of roads open for general traffic in Australia is shown in table 23.1 below. The information is classified according to broad surface groups as defined by the respective States and Territories.

## Registered motor vehicles

Censuses of registered motor vehicles have been conducted in respect of 31 December 1955 and 1962; 30 September 1971, 1976, 1979, 1982, 1985, 1988 and 1991; 30 June 1993; 31 May 1995; 31 October 1996 and 1997.

As shown in table 23.2, the number of motor vehicles steadily increased in every Motor Vehicle Census since 1995.

There were 11,351,292 motor vehicles (excluding motor cycles, tractors, plant and equipment, caravans and trailers) registered in Australia at 31 October 1997 (table 23.2 and 23.3). This represents an increase of 2.3% per year since 31 October 1996.

During 1996 the National Heavy Vehicle Registration Scheme (NHRS) was introduced in all States/Territories. This scheme means that for vehicles with Gross Vehicle Mass (GVM) of 4.5 tonnes or greater, uniform fees were charged in each State/Territory.

Table 23.4 shows the average age of vehicle by type of vehicle. The average age of the total motor vehicle fleet increased slightly, from 10.5 years in 1995 to 10.7 years in 1997. The rate of increase of the average age of vehicles has slowed significantly in recent times, due to an increase in new registrations and a higher attrition rate.

**23.1 LENGTHS OF ROADS OPEN FOR GENERAL TRAFFIC, By Road Surface and State/Territory—As at 30 June**

	NSW(a) 1998	Vic.(b) 1998	Qld 1997	SA 1998	WA(c) 1997	Tas. 1998	NT(d) 1998	ACT 1998
Surface of roads	km	km	km	km	km	km	km	km
Bitumen or concrete	87 505	73 149	66 130	26 737	46 814	10 113	6 346	2 488
Gravel, crushed stone or other improved surface	93 304	51 078	50 807	41 011	55 444	12 565	7 114	130
Formed only	(e)	30 852	44 949	20 671	28 698	700	5 801	—
Cleared only	n.a.	(f)	15 131	7 476	14 555	(f)	3 253	—
<b>Total</b>	<b>180 809</b>	<b>155 079</b>	<b>177 017</b>	<b>95 895</b>	<b>145 511</b>	<b>23 378</b>	<b>22 514</b>	<b>2 618</b>

(a) Excludes Lord Howe Island, forestry controlled roads or crown roads. (b) Excludes roads coming under the responsibility of the Department of Conservation and Natural Resources. (c) Excludes approximately 25,300 kilometres of forestry roads. (d) Excludes roads managed by Local Government bodies. Approximately 1,000 kilometres of roads have been transferred to NT Government as Aboriginal Strategic Roads from 1 July 1997. (e) Included in gravel, crushed stone or other improved surface. (f) Included with Formed only.

Source: Derived mainly from Road and Traffic Authorities and local government sources in each State and Territory.

**23.2 MOTOR VEHICLES ON REGISTER**

	Passenger vehicles(a)	Light commercial vehicles	Trucks(b)	Buses	Total (excludes motor cycles)	Motor cycles
	'000	'000	'000	'000	'000	'000
Motor vehicle census years						
1995	8 660.6	1 527.2	410.9	52.2	<b>10 650.9</b>	296.6
1996	9 021.5	1 601.4	415.4	58.8	<b>11 097.3</b>	303.9
1997	9 239.5	1 632.2	418.4	61.1	<b>11 351.3</b>	313.1

(a) Includes campervans. (b) Includes rigid, articulated and non-freight carrying trucks.

Source: *Motor Vehicle Census, Australia* (9309.0).

**23.3 MOTOR VEHICLE CENSUS—31 October 1997**

State/Territory	Passenger vehicles(a)	Light commercials	Trucks			Buses	Total(b)	Motor cycles
			Rigid	Articulated	Non-freight carrying			
	'000	'000	'000	'000	'000	'000	'000	'000
NSW	2 850.5	459.5	104.8	15.8	3.2	15.9	<b>3 449.6</b>	80.6
Vic.	2 529.0	385.9	87.0	17.1	5.4	14.3	<b>3 038.7</b>	80.3
Qld	1 612.3	361.1	64.7	11.8	2.8	12.9	<b>2 065.5</b>	66.6
SA	806.3	120.9	25.9	5.1	1.6	3.7	<b>963.5</b>	28.7
WA	963.5	204.4	44.0	7.0	2.5	8.8	<b>1 230.3</b>	39.3
Tas.	243.2	59.2	10.5	1.5	0.9	2.2	<b>317.4</b>	7.6
NT	64.9	23.6	3.2	0.8	0.2	2.5	<b>95.2</b>	3.9
ACT	169.9	17.6	2.4	0.3	0.1	1.0	<b>191.2</b>	6.0
Aust.	9 239.5	1 632.2	342.4	59.3	17.0	61.1	<b>11 351.3</b>	313.1

(a) Includes campervans. (b) Excludes motor cycles, tractors, plant and equipment, caravans and trailers.

Source: *Motor Vehicle Census, Australia* (9309.0).

**23.4 ESTIMATED AVERAGE AGE(a) OF THE VEHICLE FLEET(b), By State of Registration—31 October 1997 and 31 May 1995 (years)**

Type of vehicle	State of registration 1997									Aust. 1997	Aust. 1995
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT			
Passenger vehicles	9.5	11.1	10.3	12.1	10.6	12.1	9.2	10.1		10.5	10.3
Campervans	16.4	18.8	15.7	17.9	18.8	17.7	13.1	17.4		17.6	16.3
Light commercial vehicles	10.5	12.4	11.0	12.6	11.3	12.8	9.8	10.6		11.4	11.0
Rigid trucks with GVM 3.5 and less than 4.5 tonnes	10.8	14.0	11.5	14.2	13.2	16.9	6.1	11.7		12.2	11.5
Rigid trucks with GVM 4.5 tonnes and over	13.7	16.5	13.8	16.8	16.2	16.0	12.0	10.8		15.1	14.2
Articulated trucks	11.3	11.9	11.1	10.9	12.7	10.5	10.8	9.1		11.5	11.0
Non-freight carrying trucks	13.2	13.6	11.8	13.0	17.2	15.9	12.1	17.2		13.8	13.0
Buses	8.8	10.0	9.2	11.1	7.4	12.9	5.3	8.9		9.1	8.8
Motor cycles	9.6	10.0	10.9	9.8	11.3	10.5	8.6	9.9		10.2	9.9
<b>Total</b>	<b>9.7</b>	<b>11.4</b>	<b>10.5</b>	<b>12.2</b>	<b>11.0</b>	<b>12.4</b>	<b>9.3</b>	<b>10.2</b>		<b>10.7</b>	<b>10.5</b>

(a) For more details on calculation of average age refer to the Glossary. (b) Excludes plant and equipment, caravans and trailers.

(c) Year of manufacture is frequently not reported for South Australian motor cycles.

Source: *Motor Vehicle Census, Australia* (9309.0).

**23.5 MOTOR VEHICLES(a) ON REGISTER PER 1,000 OF POPULATION, By State/Territory**

States/Territory	Motor vehicle Census years					
	1988	1991	1993	1995	1996	1997
NSW	524	525	529	545	556	563
Vic. (b)	598	622	642	637	669	677
Qld	567	569	593	614	624	627
SA	616	637	638	653	667	671
WA	608	653	665	679	694	706
Tas.	634	643	661	676	686	686
NT	(c)389	507	497	520	529	530
ACT	511	556	591	604	613	637
<b>Aust.</b>	<b>567</b>	<b>582</b>	<b>595</b>	<b>606</b>	<b>614</b>	<b>630</b>

(a) Excludes motor cycles, tractors, plant and equipment, caravans and trailers. (b) The 1996 Victorian data are based on actual registration data only up to March 1996, plus new registrations from March to October 1996. (c) 1988 data understated the number of vehicles on register.

Source: Motor Vehicle Census, Australia (9309.0).

The number of registered motor vehicles (excluding motor cycles) per 1,000 of population has generally followed the same trend as the total number of motor vehicles. The figure of 630 vehicles per 1,000 of population in 1997 was the highest recorded (table 23.5).

**Registrations of new motor vehicles**

Annual registrations of new vehicles processed by motor vehicle registration authorities in all States and Territories are shown in tables 23.6 and 23.7. Total registrations increased continually throughout the 1997–98 financial year, and recorded the highest ever monthly total of 88,054 in June. The number of registrations in the 1997–98 financial year was also the highest ever recorded.

**23.6 REGISTRATIONS OF NEW MOTOR VEHICLES**

Year	Passenger vehicles(a)	Light commercial vehicles(b)	Trucks				Total (excludes motor cycles)	Motor cycles
			Rigid	Articulated	Non-freight carrying(c)	Buses		
	no.	no.	no.	no.	no.	no.	no.	no.
1992–93	449 843	74 748	9 780	2 199	708	4 230	<b>541 508</b>	17 513
1993–94	475 981	80 720	9 812	3 147	795	3 814	<b>574 269</b>	17 425
1994–95	528 502	88 840	11 392	4 815	867	4 493	<b>638 909</b>	20 505
1995–96	531 778	86 666	9 726	2 909	1 074	4 376	<b>636 529</b>	22 345
1996–97	557 962	88 204	9 470	3 145	1 099	3 972	<b>663 852</b>	22 842
1997–98	654 697	96 767	11 382	4 006	1 247	3 746	<b>771 845</b>	26 765

(a) Formerly described as motor cars and station wagons. From 1 July 1991 includes forward control passenger vehicles of less than 10 seats. (b) Combination of utilities and panel vans. From 1 July 1991 includes cab chassis vehicles 3.5 tonnes gross vehicle mass or less. (c) Formerly 'Other truck type vehicles'.

Source: New Motor Vehicle Registrations, Australia, Preliminary (9301.0) and unpublished statistics.

## 23.7 REGISTRATIONS OF NEW MOTOR VEHICLES, By State/Territory—1997–98

State/Territory	Passenger vehicles	Light commercial vehicles(a)	Trucks				Total (excludes motor cycles)	Motor cycles
			Rigid	Articulated	Non-freight carrying	Buses		
no.	no.	no.	no.	no.	no.	no.	no.	no.
NSW	223 424	29 544	3 979	1 066	176	918	<b>259 107</b>	8 104
Vic.	166 675	20 705	2 735	1 208	326	734	<b>192 383</b>	7 499
Qld	118 315	23 797	2 490	829	480	817	<b>146 728</b>	4 779
SA	43 407	6 099	608	437	99	210	<b>50 860</b>	1 807
WA	67 675	11 486	1 197	332	120	646	<b>81 456</b>	3 103
Tas.	13 232	2 387	161	102	32	58	<b>15 972</b>	542
NT	6 566	1 635	169	21	13	290	<b>8 694</b>	428
ACT	15 403	1 114	43	11	1	73	<b>16 645</b>	503
Aust.	654 697	96 767	11 382	4 006	1 247	3 746	<b>771 845</b>	26 765

(a) Combination of utilities and panel vans. Includes cab chassis vehicles 3.5 tonnes gross vehicle mass or less.

Source: Unpublished statistics, New Motor Vehicle Registrations.

### Use of motor vehicles

The Survey of Motor Vehicle Use has been undertaken periodically by the ABS since 1963, including every three years between 1976 and 1991, and in 1995. The Survey is currently being completed for the 1997–98 financial year. The following are some of the main findings from the 1995 survey.

Motor vehicles in Australia are estimated to have travelled a total of 166,514 million kilometres in the 12 months ended September 1995, a rise of 11% over the corresponding period in 1991. Of the total distance travelled, 34% was for business purposes, 24% for travel to and from work, and 43% for private purposes. Passenger vehicles accounted for 74% of total distance travelled, freight carrying vehicles (including light commercial vehicles, rigid trucks and articulated trucks) 24%, and motor cycles and buses both 1% (based on table 23.8).

The average distance travelled in the 12 months by all vehicles (including vehicles which reported zero distance travelled) was 15,200 km, an increase of about 2% over the 12 months ended September 1991. Excluding vehicles that did not travel, the average distance travelled increased to 15,600 km, as table 23.9 shows. The table also shows the average kilometres travelled by different types of vehicle, and where they travelled.

Load carrying vehicles (light commercial vehicles, rigid trucks and articulated trucks) performed 119,227 million tonne-kilometres (table 23.10), with vehicles registered in New South Wales, Victoria and Queensland accounting for about 70% of the total (27,713 million, 30,571 million and 25,666 million tonne-kilometres, respectively).

### 23.8 TOTAL KILOMETRES TRAVELLED, By Type of Vehicle and Purpose—Year Ended 30 September 1995

Type of vehicle	Business					Purpose
	Laden	Unladen	Total	Total to and from work	Private	Total
	mill. km	mill. km	mill. km	mill. km	mill. km	mill. km
Passenger vehicles	..	..	26 116	33 158	64 417	123 691
Motor cycles	..	..	177	579	769	1 526
Light commercial vehicles	11 558	4 342	(a)16 918	5 190	5 642	27 751
Rigid trucks	4 740	1 650	6 391	209	125	6 725
Articulated trucks	3 778	1 285	5 063	24	7	5 094
Other truck types	..	..	241	3	5	249
Buses	..	..	1 406	24	49	1 479
<b>Total</b>	<b>20 076</b>	<b>7 277</b>	<b>56 312</b>	<b>39 188</b>	<b>71 015</b>	<b>166 514</b>

(a) Includes total business travel for some light commercial vehicles where the laden and unladen business kilometres could not be obtained.

Source: Survey of Motor Vehicle Use, Australia, Preliminary (9202.0).

### 23.9 AVERAGE KILOMETRES TRAVELLED(a), By Type of Vehicle and Area of Operation—Year Ended 30 September 1995

Type of vehicle	Area of operation(b)					
	Capital city(c)	Provincial urban	Other areas of State or Territory	Total within State of registration	Interstate	Australia
	'000 km	'000 km	'000 km	'000 km	'000 km	'000 km
Passenger vehicles	10.7	6.6	6.7	14.1	3.7	14.7
Motor cycles	5.1	2.7	3.1	5.2	2.9	5.4
Light commercial vehicles	14.7	11.1	11.7	17.4	5.8	18.0
Rigid trucks	21.5	14.8	12.1	19.9	10.6	20.5
Articulated trucks	30.6	24.2	52.3	67.0	70.9	89.9
Non-freight carrying types	21.4	11.6	8.6	16.0	5.1	16.1
Buses	26.4	14.6	21.3	30.9	16.9	32.8
<b>Total</b>	<b>11.4</b>	<b>7.3</b>	<b>8.0</b>	<b>14.9</b>	<b>4.9</b>	<b>15.6</b>

(a) As this table relates to actual vehicle usage, vehicles which travelled zero distance are excluded from the calculation of averages. (b) Includes the average distance travelled by all vehicles registered in a State/Territory within the specified area. (c) Includes all of the ACT in Capital City and all of the NT in Other areas of State or Territory.

Source: Survey of Motor Vehicle Use, Australia, Preliminary (9202.0).

### 23.10 TOTAL TONNE-KILOMETRES(a), By Type of Vehicle and State of Registration—Year Ended 30 September 1995

Type of vehicle	State of registration								
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	mill. t-km	mill. t-km	mill. t-km	mill. t-km	mill. t-km	mill. t-km	mill. t-km	mill. t-km	mill. t-km
Light commercial vehicles	1 217	1 202	1 246	330	582	105	43	74	4 799
Rigid trucks	7 737	5 599	5 291	1 749	3 473	630	305	259	25 044
Articulated trucks	18 758	23 770	19 129	10 362	11 201	2 081	3 583	500	89 384
<b>Total</b>	<b>27 713</b>	<b>30 571</b>	<b>25 666</b>	<b>12 442</b>	<b>15 256</b>	<b>2 816</b>	<b>3 932</b>	<b>833</b>	<b>119 227</b>

(a) Total tonne-kilometres is the product of reported average load and total business kilometres travelled while laden.

Source: Survey of Motor Vehicle Use, Australia, Preliminary (9202.0).

**23.11 DRIVERS' AND RIDERS' LICENCES, By State/Territory**

	NSW(a)	Vic.	Qld(b)	SA	WA	Tas.(c)	NT	ACT
Type of licence	no.	no.	no.	no.	no.	no.	no.	no.
<b>30 JUNE 1997</b>								
Motor vehicle	3 950 855	2 975 654	n.a.	847 237	n.a.	267 179	80 810	187 579
Motor cycle	368 749	193 862	341 357	1 600	n.a.	149	105	142
Combined	(d)365 799	—	2 056 996	152 909	—	29 002	19 864	21 859
<b>Total</b>	<b>4 319 604</b>	<b>3 169 516</b>	<b>n.a.</b>	<b>1 001 746</b>	<b>n.a.</b>	<b>296 300</b>	<b>100 779</b>	<b>209 581</b>
<b>30 JUNE 1998</b>								
Motor vehicle	4 027 296	3 055 847	n.a.	972 891	1 095 839	266 693	84 871	191 044
Motor cycle	377 180	204 332	351 002	(f)150 238	(f)120 263	140	54	129
Combined	(d)374 279	—	(e)2 158 587	n.a.	n.a.	29 379	21 287	22 064
<b>Total</b>	<b>4 404 476</b>	<b>3 260 179</b>	<b>n.a.</b>	<b>1 123 129</b>	<b>1 216 102</b>	<b>296 212</b>	<b>105 476</b>	<b>213 237</b>

(a) Includes learners licences. (b) Queensland figures for 1997 are as at 2 April 1996. (c) 1997 data are as at 30 June 1996. (d) Not included in the total. (e) Includes persons with only motor vehicle licences and persons with motor vehicle and motor cycle licences. (f) Includes persons with other motor vehicle licences.

Source: Motor Registry in each State and Territory.

**Drivers' and riders' licences**

Table 23.11 shows the number of licences for motor vehicle drivers and motor cycle riders as at 30 June 1997 and 1998.

**Road traffic accidents**

As table 23.12 shows, the number of persons killed in Australia as a result of road traffic accidents fell substantially (10.3%) from 1996 to 1997. All States/Territories recorded lower numbers of fatalities than for 1996, with particularly large falls in Tasmania, the

Australian Capital Territory, the Northern Territory and South Australia. The numbers of persons killed have dropped each year since 1992, with the exception of 1995, despite the number of vehicles per head of population increasing over this period (see table 23.5).

Table 23.13 shows, for 1997, the number of road traffic fatalities per 100,000 population and per 10,000 motor vehicles registered. Table 23.14 shows the number of road traffic casualties for 1996.

**23.12 ROAD TRAFFIC ACCIDENTS INVOLVING FATALITIES, By State/Territory**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	<b>Aust.</b>
Year	no.	no.	no.	no.	no.	no.	no.	no.	<b>no.</b>
<b>ACCIDENTS INVOLVING FATALITIES</b>									
1992	578	365	364	142	171	56	42	18	<b>1 734</b>
1993	518	381	357	191	190	47	40	11	<b>1 735</b>
1994	557	346	367	145	195	51	36	15	<b>1 712</b>
1995	563	371	408	163	194	53	56	14	<b>1 822</b>
1996	538	382	338	162	220	53	58	17	<b>1 768</b>
1997	528	346	320	123	184	29	66	17	<b>1 603</b>
<b>PERSONS KILLED</b>									
1992	649	396	416	165	200	74	54	20	<b>1 974</b>
1993	581	435	396	218	209	58	44	12	<b>1 953</b>
1994	647	378	422	159	211	59	41	17	<b>1 934</b>
1995	620	418	456	181	209	57	61	15	<b>2 017</b>
1996	581	417	385	181	247	64	72	23	<b>1 970</b>
1997	579	377	358	148	197	32	60	17	<b>1 768</b>

Source: Federal Office of Road Safety, Road Fatalities Australia, 1997.



**23.13 ROAD TRAFFIC FATALITIES, By State/Territory—1997**

State/Territory	Number	Per 100,000 population(a)	Persons killed
			Per 10,000 motor vehicles registered(b)
New South Wales	579	9.2	1.6
Victoria	377	8.2	1.2
Queensland	358	10.5	1.7
South Australia	148	10.0	1.5
Western Australia	197	11.0	1.6
Tasmania	32	6.8	1.0
Northern Territory	60	32.1	6.1
Australian Capital Territory	17	5.5	0.9
<b>Aust.</b>	<b>1 768</b>	<b>9.5</b>	<b>1.5</b>

(a) Estimated resident population at 30 June 1997. (b) Number of registered motor vehicles (excluding tractors, plant and equipment) at 31 October 1997.

Source: Road Statistics Data—Federal Office of Road Safety, Road Fatalities Australia, 1997; Population Data—Estimated Resident Population, Australia, June 1997 (3201.0); Registered Vehicle Data—Motor Vehicle Census, Australia, 31 October 1997 (9309.0).

**23.14 ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES(a), By State Territory—1996**

State/Territory	Number	Per 100,000 of population(b)	Persons injured
			Per 10,000 motor vehicles registered(c)
New South Wales	5 967	96	17
Victoria	6 077	133	21
Queensland	4 469	134	22
South Australia	1 720	117	18
Western Australia	2 592	147	21
Tasmania	439	93	14
Northern Territory	480	264	50
Australian Capital Territory	245	80	12
<b>Aust.</b>	<b>21 989</b>	<b>120</b>	<b>20</b>

(a) Accidents reported to the police or other relevant authority which occurred in public thoroughfares and which resulted in death within thirty days or personal injury to the extent that the injured person was admitted to hospital. (b) Estimated resident population at 30 June 1996. (c) Number of registered motor vehicles (excluding tractors, plant and equipment) at 31 October 1996.

Source: Road Statistics Data—Federal Office of Road Safety, Road Injury Australia, 1996; Population Data—Estimated resident Population, Australia (3201.0); Registered Vehicle Data—Motor Vehicle Census, Australia, 31 October 1996 (9309.0).

## Rail transport

### Government railways

The government-owned railway operators are:

- in NSW, as at 1 July 1996: State Rail (passenger), FreightCorp (intrastate freight), Rail Access Corporation (track access);
- in Victoria, as at 1 July 1998: V/Line Passenger Corporation (non-urban passenger services), Hillside Trains and Bayside Trains (urban services), V/Line Freight Corporation (intrastate freight);
- Queensland Rail;

- Westrail;
- TransAdelaide;
- National Rail Corporation Ltd; and
- Australian National (sold to private operators in November 1997).

The government rail systems include routes in more than one State, and the Victorian system extends into New South Wales. Therefore the system route-kilometres shown in table 23.15 do not represent route-kilometres exclusively within each State and Territory.

**23.15 GOVERNMENT RAILWAYS, Route-Kilometres Operated**

	NSW	Vic.	Qld	SA(a)	WA	Australian National	Australia
As at 30 June	km	km	km	km	km	km(b)	km
1992	7 451	5 179	10 011	120	5 554	6 559	<b>34 927</b>
1993	7 451	5 107	9 797	120	5 583	6 235	<b>34 293</b>
1994	7 451	5 107	9 357	120	5 583	6 235	<b>33 853</b>
1995	7 451	4 917	9 452	120	5 583	6 152	<b>33 675</b>
1996	7 451	4 872	9 442	120	5 369	6 118	<b>33 372</b>
1997	7 469	4 952	9 458	120	5 139	5 961	<b>33 099</b>

(a) Suburban only. Country routes were transferred to Australian National in 1978. (b) Australian National is now privatised.

Source: Australasian Railway Association Inc.

The National Rail Corporation was incorporated as a commercial operating company in September 1991 with a charter to take over all interstate rail freight business and related functions and assets from government-owned railways. This transfer occurred over a three-year transition period ending on 31 January 1996. Its shareholders are the Commonwealth Government, and the Governments of New South Wales and Victoria. Commercial operations began on 5 April 1993.

Australian National's rail operating businesses were sold to three consortia in November 1997. SA Freight (AN's South Australian freight operations) was sold to a consortium led by American shortline operator Genesee and Wyoming Railroad (with Bankers Trust and Australian companies Transfield Maintenance and Evans Deakin Industries). Tasrail (AN's Tasmanian operations) was sold to the Australian Transport Network, a consortium of Wisconsin

Central (a US regional railway based in Wisconsin), Tranz Rail (NZ railways), Fay Richwhite and Berkshire Partners (merchant bankers). AN Passenger (operating 'The Ghan', the 'The Indian Pacific' and 'The Overland') was sold to the Great Southern Railway (Macquarie Bank with British rail operators GB Railways and Serco).

Tables 23.16 and 23.17 show information on aspects of the performance of the government railways. The information relating to passenger journeys, freight-tonnes carried and freight tonne-kilometres refers only to operations for which revenue was received.

**Non-government railways**

Statistics shown in table 23.18 relate to non-government railways with a route distance exceeding two kilometres, and which operate outside industrial estates, harbour precincts, mines and quarries.

**23.16 GOVERNMENT RAILWAYS, Passenger Journeys(a)**

	NSW	Vic.	Qld	SA	WA	Australian National	Australia
	'000	'000	'000	'000	'000	'000	'000
<b>1994-95</b>							
Suburban	250 000	105 360	37 026	8 400	23 500	—	<b>424 286</b>
Country	2 200	6 390	895	—	247	191	<b>9 923</b>
<b>1995-96</b>							
Suburban	256 400	109 240	39 187	8 273	23 007	—	<b>436 107</b>
Country	2 400	7 016	881	—	279	244	<b>10 820</b>
<b>1996-97</b>							
Suburban	264 700	112 626	41 459	8 165	(b)28 900	—	<b>455 850</b>
Country	2 510	7 301	861	—	264	252	<b>11 188</b>

(a) Based on ticket sales making allowances for periodical tickets. (b) In 1996-97, a revised counting methodology was used that resulted in an increase.

Source: Various rail authorities, the Rail Industry Council and the Australian Bureau of Statistics.

**23.17 GOVERNMENT RAILWAYS**

Year	NSW	Vic.	Qld	WA	Australian National	National Rail	Australia
FREIGHT CARRIED ('000 t)							
1991–92	57 341	8 492	90 658	25 890	13 083	n.a.	<b>195 464</b>
1992–93	61 597	9 646	90 303	26 523	13 899	1 200	<b>203 168</b>
1993–94	65 500	7 579	92 092	27 726	14 942	8 800	<b>216 639</b>
1994–95	65 200	(a)5 716	96 807	29 317	(b)7 846	10 100	<b>214 986</b>
1995–96	63 800	6 877	96 120	31 081	7 905	9 941	<b>215 724</b>
1996–97	72 600	8 186	104 963	31 776	8 691	9 156	<b>235 372</b>
NET TONNE-KILOMETRES (mill.)							
1991–92	13 811	2 704	24 461	4 878	7 799	n.a.	<b>54 198</b>
1992–93	14 837	3 678	24 391	4 970	8 480	n.a.	<b>56 356</b>
1993–94	16 203	4 212	25 011	5 447	9 159	13 916	<b>60 032</b>
1994–95	9 000	(a)1 790	26 492	6 235	(b)1 500	16 600	<b>61 617</b>
1995–96	10 067	1 970	26 368	6 804	1 379	16 900	<b>63 488</b>
1996–97	12 140	2 270	28 754	7 496	1 516	16 000	<b>68 176</b>
FREIGHT EARNINGS (\$'000)							
1991–92	789 236	135 393	1 138 000	254 617	266 363	n.a.	<b>2 583 609</b>
1992–93	815 336	151 311	1 175 000	248 314	274 663	60 800	<b>2 725 424</b>
1993–94	(c)688 796	158 747	1 196 000	269 494	272 656	443 408	<b>3 029 101</b>
1994–95	637 438	(a)111 243	1 242 000	277 361	(b)74 893	479 677	<b>2 822 612</b>
1995–96	810 500	121 210	1 297 000	254 704	73 578	475 747	<b>3 032 739</b>
1996–97	816 059	117 785	1 074 358	256 496	84 279	444 500	<b>2 793 477</b>

(a) The substantial falls in Victoria are attributed to the effects of the drought on the haulage of grain. (b) The substantial falls by Australian National are attributed to National Rail's new role as an interstate freight carrier. (c) In 1993–94 and subsequent years the revenue from the National Rail Corporation is included in Intersystem Recoveries. Prior to 1993–94 this revenue was included in freight revenue.

Source: Various rail authorities and the Rail Industry Council.

**23.18 NON-GOVERNMENT RAILWAYS, Activities**

Year	Iron ore railways	Sugar tramways	Coal railways(a)	Other non-government railways	Total(a)
TONNES CARRIED (mill.)					
1991–92	111.1	18.6	9.3	12.0	<b>150.8</b>
1992–93	112.9	26.0	8.5	11.8	<b>159.2</b>
1993–94	117.5	29.3	8.7	11.5	<b>167.0</b>
1994–95	121.6	31.8	7.9	12.1	<b>173.4</b>
1995–96	129.3	34.5	8.0	11.8	<b>183.6</b>
1996–97	132.9	35.8	8.5	15.1	<b>192.3</b>
TONNE-KILOMETRES (mill.)					
1991–92	34 362.0	334.0	123.0	259.0	<b>35 078.0</b>
1992–93	34 929.0	468.0	117.0	253.0	<b>35 767.0</b>
1993–94	36 849.0	527.0	123.0	248.0	<b>37 747.0</b>
1994–95	37 177.0	572.0	111.0	250.0	<b>38 110.0</b>
1995–96	39 849.0	620.0	110.0	244.0	<b>40 823.0</b>
1996–97	40 930.0	644.0	112.0	308.0	<b>41 994.0</b>

(a) Includes transfers to and from government railways.

Source: Bureau of Transport Economics, Transport Indicators Unit.

## Water transport

### The Australian fleet

New South Wales and Queensland account for the majority of ships registered in Australia. The majority of ships are used for non-commercial purposes (see table 23.19).

Of the 62 ships which comprise the major Australian trading fleet (2,000 dead weight tonnes (DWT) and over), most operated on coastal routes (see table 23.20). The minor trading fleet (150 to 2000 DWT) consists of 14 ships. The total Australian fleet consists of

31 bulk carriers, 17 tankers, 4 containers, 9 general cargo, 14 RoRo cargo-landing barges, and one RoRo passenger ship. The largest registered costal ship was the Iron Whyalla (141,475 DWT).

### Coastal shipping cargo

Table 23.21 shows the gross weight of shipping cargo loaded at an Australian port for discharge at another Australian port. Both interstate and intrastate cargo movements are included. Cargo loaded or to be discharged at an overseas port is excluded.

**23.19 SHIPS REGISTERED(a) IN AUSTRALIA—30 June 1998**

Location	Nature of registration					Total
	Recreational	Fishing	Government	Demise chartered(b)	Commercial and trading(c)	
	no.	no.	no.	no.	no.	no.
New South Wales	1 661	288	4	7	236	2 196
Victoria	597	200	—	4	97	898
Queensland	1 475	717	18	6	362	2 578
South Australia	272	306	1	—	40	619
Western Australia	575	411	—	2	132	1 120
Tasmania	223	219	2	—	56	500
Northern Territory	252	60	1	—	22	335
<b>Australia</b>	<b>5 055</b>	<b>2 201</b>	<b>26</b>	<b>19</b>	<b>945</b>	<b>8 246</b>

(a) Australian-owned commercial or trading ships of 24 metres or more in tonnage length. All ships, regardless of tonnage length, must be registered before departing on a voyage from Australia or from a foreign port where there is an Australian diplomatic representative. (b) These ships are not necessarily engaged in trade or commerce. (c) Relates to ships used for trading and commercial purposes. Some of these ships are less than 24 metres in tonnage length.

Source: Australian Maritime Safety Authority.

**23.20 SUMMARY OF THE AUSTRALIAN TRADING FLEET OF SHIPS 150 GROSS TONNES OR MORE—30 June 1997**

Ships	Number	Dead weight tonnage (DWT)	Gross tonnes
Major Australian fleet(a)			
Coastal			
Australian registered	38	1 327 523	890 327
Overseas registered	4	22 448	25 259
Total coastal fleet	42	1 349 971	915 586
Overseas			
Australian registered	19	1 713 997	1 260 427
Overseas registered	1	94 347	54 880
Total overseas fleet	20	1 808 344	1 315 307
Total	62	3 158 315	2 230 893
Minor trading ships(b)			
Australian registered	12	4 797	5 128
Overseas registered	2	1 456	2 120
<b>Australian trading fleet</b>	<b>76</b>	<b>3 164 568</b>	<b>2 238 141</b>

(a) 2,000 DWT and over. (b) Minor trading ships are between 150 and 2,000 DWT.

Source: Department of Transport and Regional Services.

**23.21 COASTAL CARGO LOADED AND DISCHARGED, Gross Weight—1994–95**

		Loaded	Discharged		
		'000 t	'000 t		
Port				Port	
New South Wales				South Australia	
Sydney	56	2 432		Adelaide	785
Botany Bay	756	3 765		Port Stanvac	691
Newcastle	338	5 157		Other	5 640
Port Kembla	2 603	7 742		<i>Total</i>	7 117
Other	1 205	100		Western Australia	
<i>Total</i>	4 957	19 196		Fremantle	1 874
Victoria				Other	9 406
Melbourne	1 859	3 471		<i>Total</i>	11 280
Geelong	1 219	971		Tasmania	
Hastings	5 248	917		Hobart	560
Other	33	653		Burnie	1 016
<i>Total</i>	8 360	6 011		Devonport	1 061
Queensland				Launceston	312
Brisbane	1 830	4 188		Other	1 250
Gladstone	1 418	8 718		<i>Total</i>	4 200
Other	9 307	2 287		Northern Territory	
<i>Total</i>	12 555	15 193		Darwin	79
				Other	642
				<i>Total</i>	721
<b>Total all ports</b>	<b>49 190</b>	<b>50 466</b>			

Source: Department of Transport and Regional Services.

## Air transport

### International activity

#### International scheduled passenger service operators

At 31 December 1997, 52 international airlines were operating regular scheduled passenger air services to and from Australia.

Air India and Sempati Air withdrew from Australia. China Southern Airlines and MBS Pty Ltd started international operation.

Qantas operates international and domestic flights. See the *Domestic activity* section for details of the Qantas fleet. British Airways purchased 25% of Qantas Airways Limited on 10 March 1993. The company was floated on the Australian Stock Exchange on 22 June 1995.

Ansett Australia operated its first international flight in its own right on 11 September 1993.

#### International non-scheduled services

Passenger and freight charter policies in Australia encourage inbound tourism and freight carriage by non-scheduled services, particularly over routes not served by the scheduled carriers. Over recent years, there has been a significant increase in the passenger charter market, with airlines from the United Kingdom, New Zealand and Canada operating services during the summer period.

#### International traffic

Particulars of scheduled international airline traffic to and from Australia during 1997 are shown in table 23.22. Note that 'Australia' includes Norfolk Island. These figures do not include traffic between Norfolk Island and other parts of Australia. The number of flights and passengers, and the weight of freight and mail flying both into and out of Australia have increased significantly from data reported in the year ending 1996. Table 23.23 shows freight tonnes carried between overseas and Australian cities (city pairs). Table 23.24 shows the number of airline passengers (passenger traffic) passing through Australia's international airports.

**23.22 SCHEDULED INTERNATIONAL AIRLINE TRAFFIC TO AND FROM AUSTRALIA(a)—  
Year ended December 1997**

Type of traffic	Flights(b)(c) no.	Passengers no.	Freight tonnes	Mail tonnes
<b>TRAFFIC TO AUSTRALIA</b>				
Qantas Airways Limited	13 216	2 722 302	86 907	3 598
Ansett Australia	1 775	317 098	13 309	1 080
National Jet Systems	89	2 167	20	7
Other airlines	23 377	4 049 412	203 389	8 715
<b>All airlines</b>	<b>38 457</b>	<b>7 090 979</b>	<b>303 625</b>	<b>13 400</b>
<b>TRAFFIC FROM AUSTRALIA</b>				
Qantas Airways Limited	13 211	2 705 282	103 866	5 448
Ansett Australia	1 774	308 754	11 969	175
National Jet Systems	89	2 166	1	0
Other airlines	22 841	3 994 729	229 910	2 952
<b>All airlines</b>	<b>37 915</b>	<b>7 010 931</b>	<b>345 746</b>	<b>8 575</b>

(a) Australia and Norfolk Island. (b) Includes Qantas flights using aircraft leased from other airlines and vice versa. (c) The difference between in/out numbers arises because some outward flights are operated as non-scheduled, and thus not counted in the above table.

Source: Department of Transport and Regional Services.

**23.23 FREIGHT CARRIED BY CITY PAIRS—Year ended December**

	1995	1996	1997
	tonnes	tonnes	tonnes
Auckland/Sydney	40 939	42 210	50 610
Singapore/Sydney	33 654	36 250	37 403
Hong Kong/Sydney	34 514	35 802	36 945
Singapore/Melbourne	29 732	29 300	33 910
Auckland/Melbourne	23 764	33 735	32 849
Hong Kong/Melbourne	27 277	23 069	27 787
Los Angeles/Sydney	31 715	28 240	25 732
Tokyo/Sydney	21 970	21 389	23 611
Singapore/Perth	18 796	20 799	22 784
Auckland/Brisbane	11 618	12 598	15 300
Other city pairs	276 920	302 114	342 441
<b>All city pairs</b>	<b>550 900</b>	<b>585 505</b>	<b>649 371</b>

Source: Department of Transport and Regional Services.

**23.24 PASSENGER TRAFFIC THROUGH AUSTRALIAN INTERNATIONAL AIRPORTS—Year ended December**

	1995	1996	1997
Airport	no. of passengers	no. of passengers	no. of passengers
Sydney	5 861 918	6 514 831	6 879 040
Melbourne	2 011 154	2 193 309	2 370 948
Brisbane	1 965 327	2 192 110	2 285 798
Perth	1 190 837	1 292 127	1 399 514
Cairns	658 397	719 396	745 110
Adelaide	207 621	205 863	208 890
Darwin	139 637	147 888	171 319
Norfolk Island	15 676	14 797	16 176
Coolangatta(a)	—	463	13 822
Christmas Island(b)	27 479	14 513	3 895
Hobart	7 362	5 103	3 689
Port Hedland	1 267	1 536	3 209
Broome(c)	—	2 338	260
Townsville(d)	—	—	240
<b>Total</b>	<b>12 086 675</b>	<b>13 304 274</b>	<b>14 101 910</b>

(a) International operations commenced on December 1996. (b) International operations commenced November 1993, ceased on February 1997, and recommenced on October 1997. (c) International operations commenced on January 1996, and ceased on February 1997. (d) International operations ceased in October 1994, and recommenced on May 1997.

Source: Department of Transport and Regional Services.

## Domestic activity

The Commonwealth Government deregulated domestic aviation in Australia and opened the nation's interstate air services to free competition from 31 October 1990.

### Major domestic airlines as at 30 June 1997

The Ansett group's fleet consisted of 72 aircraft, including 22 Boeing 737 and 19 A320-200 Airbus jet aircraft. Regional airlines in the Ansett Group are Kendell Airlines, Aeropelican and Skywest Airlines which together had a fleet of 34 aircraft.

Qantas operated a fleet of 97 aircraft including 22 Boeing 747-476, 18 Boeing 747-438, 18 Boeing 767-338ER, and 16 Boeing 737-376 jet aircraft. Regional airlines in the Qantas Group are Eastern Australia Airlines, Southern Australia Airlines, Sunstate Airlines, and Airlink. These airlines operated 51 aircraft, the largest regional fleet in Australia.

## Regional operators

At 31 December 1997, 39 regional operators provided regular public transport air services to around 200 ports in Australia.

The aircraft used by regional operators mainly have six to nine seats. However, an increasing number of larger types are in use. Jet aircraft are also used by some regional airlines. These larger turbo-prop and jet aircraft carry the majority of airline passengers. During 1997, regional operators carried an estimated 4.6 million passengers.

## Scheduled domestic services

Statistics on all major domestic airline services and the number of domestic airline passengers passing through airports are shown in table 23.25. Table 23.26, which has been revised from previous years, shows revenue passengers on board with domestic and regional airlines at principal airports over the calendar years 1992 to 1997.

**23.25 DOMESTIC AIRLINE ACTIVITY**

	Unit	1992-93	1993-94	1994-95	1995-96	1996-97
<b>DOMESTIC AIRLINES</b>						
Hours flown	—	360 971	398 337	437 793	454 365	445 567
Aircraft departures	—	444 412	477 316	505 580	507 212	484 072
Total revenue passengers(a)	—	19 081 262	21 302 395	22 789 674	23 678 307	23 322 436
Cargo on board(b)	tonnes	144 321	163 135	169 446	172 761	190 667
Passenger kilometres performed	'000	19 937 396	22 674 835	24 625 411	26 191 426	26 299 206
Cargo tonne kilometres(b)	'000	176 897	198 281	204 903	207 760	233 645
Total tonne kilometres	'000	1 971 263	2 239 017	2 421 190	2 564 988	2 600 573
Seat kilometres available	'000	25 766 615	29 660 834	33 129 881	35 639 503	35 402 870
Revenue passenger load factor	%	77.4	76.4	74.3	73.5	74.3
Revenue weight load factor	%	61.5	61.1	59.0	57.8	58.0
<b>REGIONAL AIRLINES</b>						
Total revenue passengers(a)	—	3 133 253	3 504 101	3 783 244	(c)4 157 400	(c)4 620 000
Cargo on board(b)	tonnes	2 849	2 807	2 804	(c)2 782	(c)3 135

(a) The unit of measurement is traffic on board (which includes transit traffic). (b) Includes freight and mail. (c) Provisional data include estimates.

Source: Department of Transport and Regional Services.

**23.26 REVENUE PASSENGERS ON BOARD WITH MAJOR DOMESTIC AND REGIONAL AIRLINES AT PRINCIPAL AIRPORTS(a)**

	1992	1993	1994	1995	1996(b)	1997(b)
Airport	no.	no.	no.	no.	no.	no.
Sydney	10 452 680	11 089 393	12 341 917	13 213 332	13 901 702	14 031 130
Melbourne	8 172 013	8 646 360	9 618 621	10 481 179	11 097 264	11 198 265
Brisbane	5 229 872	5 616 706	6 386 956	6 924 345	7 375 444	7 456 411
Adelaide	2 729 855	2 909 895	3 174 741	3 419 694	3 559 829	3 622 949
Perth	2 012 473	2 201 145	2 531 929	2 782 852	3 066 332	3 147 235
Canberra	1 367 154	1 431 091	1 591 868	1 739 064	1 735 758	1 783 905
Coolangatta	1 562 932	1 679 855	1 871 875	1 998 539	2 043 393	1 920 114
Cairns	1 271 715	1 440 759	1 690 499	1 844 027	1 926 655	1 914 594
Hobart	674 416	717 091	770 250	828 986	852 506	828 879
Townsville	559 123	557 535	607 143	654 503	670 254	685 207
Launceston	456 939	486 986	540 710	574 762	592 443	556 701
Darwin	493 426	551 260	646 580	743 291	821 584	821 838

(a) The unit of measurement is passengers on board. It may include passengers in transit. (b) Data are provisional.

Source: Department of Transport and Regional Services.

**Other aviation matters**

In addition to scheduled services, a wide range of other activities is undertaken by the aviation industry, including business flying, aerial agriculture, charter, training and private flying. Charter operations and training have, in recent years, made up almost 50% of general aviation hours flown. Charter operations involve the use of aircraft in non-scheduled operations for the carriage of passengers and cargo for hire or reward.

**Airports**

At 26 February 1998, there were 277 licensed airports in Australia and its external territories.

Of these 13 were operating as international airports serving scheduled international airlines (see table 23.24). The majority of licensed airports were owned and operated by local councils, State government departments and private companies. The remaining airports were owned and operated by the Department of Defence or leased by the Commonwealth to private sector companies or government corporations.

The Commonwealth Government completed the sale of 14 airports owned and operated by the Federal Airports Corporation by 30 June 1998, and corporatised the remaining Federal airports (Sydney basin and Essendon) in July 1998.



### Air transport registrations and licences in force in Australia

At 14 December 1995, there were 9,633 aircraft registered in Australia.

At 27 June 1996, there were 29,682 holders of a current aeroplane pilot licence, including 19,076 private pilots, 6,061 commercial and senior commercial pilots and 4,545 air transport pilots. In addition, there were 2,058 holders of a current helicopter pilot licence, of whom 463 were private pilots, 1,222 commercial and senior commercial pilots and 373 air transport pilots. There were also 85 commercial balloon, 894 flight engineer and 51 navigator licences in force.

### Accidents and casualties

As Table 23.27 shows, the number of air transport accidents rose in 1997 compared with 1996. However the number of fatalities decreased. Provisional data for the first six months of 1998 show 112 accidents with 34 fatalities.

**23.27 AIR TRANSPORT(a),  
Accidents and Fatalities(b)**

	Accidents	Fatalities
Year	no.	no.
1992	311	66
1993	319	67
1994	268	64
1995	269	51
1996	246	51
1997(c)	258	38

(a) Includes airlines, general aviation and sport aviation.

(b) Includes accidents involving Australia-registered aircraft occurring overseas and accidents involving foreign-registered aircraft occurring in Australia. (c) Data are provisional.

Source: Department of Transport and Regional Services, Bureau of Air Safety Investigation.

## Government transport organisations

### General

#### Australian Transport Council

The Australian Transport Council was established on 11 June 1993, subsuming the functions of the Australian Transport Advisory Council, and incorporates meetings of the Ministerial Council for Road Transport.

It comprises Commonwealth, State, Territory and New Zealand Ministers responsible for transport, roads, marine and ports matters. The Papua New Guinea Minister for Transport and Works, and the Australian Local Government Association are also represented on the Council as observers.

The Council meets bi-annually and its primary role is to review and coordinate various aspects of transport policy, development and administration. The Council initiates discussion and reports on issues raised by Council members, and provides advice to governments on the coordination and integration of all transport and road policy issues at a national level.

#### Bureau of Transport Economics

The Bureau of Transport Economics is a centre for applied economic research in the Commonwealth Department of Transport and Regional Services. It undertakes studies and investigations that contribute to an improved understanding of the factors influencing the efficiency and growth of the transport sector and the development of effective transport policies.

## Road and Rail

### AUSTROADS

AUSTROADS is the national association of road transport and traffic authorities. It provides strategic direction for the development, management and use of Australia's road system through consultation and discussion with peak industry bodies. The functions of AUSTROADS are coordination of research, and preparation of guides and standards for improvements in, and harmonisation of, practices within an agreed national policy framework. Its membership comprises the six Australian State and two Territory road authorities, the Commonwealth Department of Transport and Regional Services, the Australian Local Government Association and Transit New Zealand.

### ARRB Transport Research Ltd

ARRB Transport Research is a leading provider of value added technology and research services addressing land transport problems. The company's National Strategic Research Program, performed under contract to AUSTROADS, keeps Australia at the leading edge of developments in the road transport industry.

ARRB Transport Research employs over 140 people who form a multi-disciplinary pool of scientists, engineers, and specialist technical and support staff for infrastructure design, asset management, construction quality, materials testing, traffic operations, safety analysis, environmental sustainability, and freight issues.

The company has headquarters in Melbourne, with extensive laboratory and testing facilities, and an office in Perth to service customers in Western Australia and the Indian Ocean Rim.

In addition to addressing Australia's transport problems, ARRB Transport Research has a rapidly growing export business with products sold in over 60 countries.

### National Road Transport Commission

The National Road Transport Commission (NRTC) is a small, independent body established as a result of the Special Premiers' Conference in 1991. Its charter is to develop nationally uniform or consistent policies and practices that improve the safety and efficiency of road transport, and reduce its environmental impacts and the costs of administration. The NRTC and its national transport legislation were to have expired in January 1998. However, following an independent

review, Heads of Government have now agreed to the NRTC being extended until 2004.

Transport reforms are developed in close consultation with Commonwealth Government, the State and Territory Governments, the road transport industry, road user groups and other interested persons and organisations, for approval by Australia's Transport Ministers.

## Water

### ANL Limited

ANL Limited was incorporated as a public company on 1 July 1989, taking over all the assets, liabilities and operations of the former Australian Shipping Commission. All shares in ANL Limited are currently held by the Commonwealth Government.

ANL is an integrated international and domestic shipping operation participating in both blue-water and shore-based shipping activities, either in its own right or in joint venture arrangements with private sector interests. ANL's chief focus is on liner (container) trades in the Asian region.

As at 30 June 1997, the ANL Limited fleet consisted of ten vessels. The fleet comprised two vehicle deck cargo ships, four cellular container ships and four bulk carriers. The fleet had a total deadweight tonnage of 360,558 DWT.

### Australian Maritime Safety Authority (AMSA)

AMSA is a government business enterprise established under the *Australian Maritime Safety Authority Act 1990* on 1 January 1991. AMSA is responsible for maritime safety regulatory activities in Australia and provision of the Australian marine navigational aids network. It operates the Marine Rescue Coordination Centre, which coordinates major maritime search and rescue activities in the Australian region. It is also responsible for oil pollution prevention and cleanup, and for the registration of Australian vessels.

## Air

### Airservices Australia

Airservices Australia and the Civil Aviation Safety Authority were established by the Commonwealth Parliament in July 1995, replacing the former Civil Aviation Authority, an independent government business enterprise established under the *Civil Aviation Act 1988*.

The function of Airservices Australia is to provide cost-effective services for Australia's aviation industry. These include: air traffic control, aeronautical information services, airport rescue and fire fighting, search and rescue, and navigation services. Airservices regards the safety of air navigation as its most important consideration. It is also required to act in a manner which ensures, as far as practicable, that the environment is protected from the effects of aircraft operations.

Airservices Australia has a prominent role in the implementation of the global Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) system, which uses satellite technology to provide a more efficient air traffic system.

### **Civil Aviation Safety Authority (CASA)**

CASA maintains, enhances and promotes the safety of civil aviation in the interests of the Australian public. CASA's focus is to work with industry to reduce aviation safety risks, the priority being the protection of fare paying passengers. This is achieved through effective safety regulation, and by encouraging a greater acceptance by industry of its obligation to maintain high safety standards.

### **Federal Airports Corporation**

The Federal Airports Corporation is a Commonwealth government business enterprise which owns, manages and develops Australia's major airports. It provides infrastructure, ensures the safety and security of persons using the airports, and oversees commercial activities in those airports. This includes arrangements with airlines and other operators for the use of airports, and for the leasing of property and letting of business concessions. The Corporation is required to be financially self-supporting. It has been established with a capital base and debt/equity ratio determined by the Commonwealth Government.

### **International organisations**

Australia is one of the 184 members (as at 20 February 1994) of the International Civil Aviation Organisation and is a member of the governing Council. Australia is also represented on the 15 member Air Navigation Commission which is responsible for drawing up international standards and procedures for the safety and efficiency of air navigation. In addition, Australia participates in the Commonwealth Air Transport

Council, the South Pacific Regional Civil Aviation Council, the Airport Operators Council International, and the International Civil Airports Association.

### **International agreements**

As at 30 June 1997, Australia has air services agreements of fuel treaty status with 40 countries. Renegotiation of capacity and route rights has occurred under most of these to accommodate traffic growth on international routes to and from Australia. Another three agreements, with Chile, Kuwait and Pakistan, will be upgraded to treaty status once the draft agreements are incorporated into domestic law.

Australia also has seven air service arrangements which are of less than treaty status. These agreements and arrangements enable airlines of both Australia and its bilateral partners to operate a network of international air services to and from Australia.

### **Multiple designation and the International Air Services Commission**

In February 1992, the then Prime Minister announced a range of reforms to aviation policy. These reforms included the introduction of multiple designation of Australia's international air services. Multiple designation enables Australian carriers, in addition to Qantas, to operate international services. To date six Australian carriers have been allocated rights to operate scheduled international air services: Qantas, Ansett, National Jet Systems, Asian Express Airlines, Flight West Airlines and Australia World Airways. A detailed analysis of overseas practices and views of the major Australian carriers was undertaken to develop the necessary legislative and administrative framework to implement multiple designation. The framework provides a mechanism for the allocation of international aviation capacity and route entitlements.

As a result of these reforms, the International Air Services Commission was established on 1 July 1992. Its role is to allocate the capacity negotiated under air services agreements and arrangements between Australia's international carriers. The Commission determines the merits of competing claims according to a strict public benefit test laid down by the Government. This test includes matters such as tourism and trade, route economies, competition policy benefits and broader national interests. The Commission reports separately to Parliament.

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## Introduction

The communication services industries encompass telecommunication services, and postal and courier services. These industries comprise the Communication Services Division of the *Australian and New Zealand Standard Industrial Classification* (ANZSIC).

The telecommunication services industry is made up of businesses mainly providing telecommunication services to the public by wire, cable or radio. The primary activities of the industry include cable and communication channel services, network communication services, operation of radio relay stations, satellite communication services, telecommunications, telephone services, teleprinter and telex services, and operation of television relay stations.

The industry excludes businesses which manufacture telecommunications equipment, businesses engaged in cable laying and transmission line construction, and those providing secretarial services (e.g. personalised telephone answering services or message delivery services). Also, the ABS classifies the

provision of radio and television services (as distinct from the operation of radio and television relay stations) as part of the Cultural and Recreational Services Division of the ANZSIC. Information on radio and television broadcasting, including the role of the National Transmission Agency, the Australian Broadcasting Corporation, the Special Broadcasting Service and commercial radio and television services, is included in *Chapter 12, Culture and recreation*.

Table 24.1 shows key measures of industry structure and performance for the Communication Services Division as a whole, compiled from the ABS's annual Economic Activity Survey. As can be seen from the table, by some measures the communication services sector overall has been one of the fastest growing in Australia. For example, sales grew from \$16b in 1992–93 to almost \$24b in 1996–97. However, in terms of other measures, growth has been uneven:

- growth in the number of businesses slowed from over 50% in 1993–94 and 1994–95, to 32% in 1995–96 and 15% in 1996–97;
- employment grew strongly (by 9%) in each of 1994–95 and 1995–96, but fell by 9% in 1996–97;

**24.1 COMMUNICATION SERVICES INDUSTRIES, Structure and Performance**

	Unit	1992–93	1993–94	1994–95	1995–96	1996–97
Industry structure						
Operating businesses	no.	889	1 400	2 133	2 824	3 248
Employment	'000	116	117	127	138	126
Income statement						
Sale of goods and services	\$m	15 937	17 463	19 883	21 709	23 686
Less cost of sales	\$m	5 876	6 447	7 583	9 314	11 111
Trading profit	\$m	10 060	11 016	12 300	12 395	14 478
Plus interest	\$m	112	99	154	179	171
Plus other operating income	\$m	374	167	252	624	79
Less labour costs	\$m	5 225	5 529	6 451	6 298	6 606
Less depreciation	\$m	2 188	2 348	2 572	2 793	3 024
Less other operating expenses	\$m	77	172	200	144	442
Earnings before interest and tax	\$m	3 057	3 233	3 483	3 963	4 656
Less interest expenses	\$m	918	762	615	724	743
Operating profit before tax	\$m	2 139	2 471	2 868	3 239	3 914
Total assets	\$m	28 088	26 713	32 094	34 432	37 960
Total liabilities	\$m	14 797	13 457	17 814	17 756	16 177
Net worth	\$m	13 291	13 256	14 280	16 676	21 783
Capital expenditure	\$m	3 821	3 328	4 488	6 261	5 367
Gross operating surplus	\$m	5 125	5 676	6 153	6 038	6 464
Industry gross product	\$m	10 350	11 205	12 605	12 923	13 070

Source: *Business Operations and Industry Performance, Australia* (8140.0).

- gross operating surplus fell by 2% in 1995–96, but rose strongly in 1993–94, 1994–95 and 1996–97, by 10%, 8% and 7% respectively;
- the rise in pre-tax profit was strong in all four years from 1993–94, ranging from 13% in 1995–96 to 21% in 1996–97;
- the increase in net worth was also strong, culminating in a 31% increase in 1996–97;
- capital spending fluctuated, falling by 13% in 1993–94, rising by 35% in 1994–95 and by 40% in 1995–96, and falling by 14% in 1996–97; and
- the gross product of the sector (i.e. its contribution to GDP and therefore possibly the prime measure of its performance) grew by 8% in 1993–94 and 12% in 1994–95, but by only 3% in 1995–96 and 1% in 1996–97.

## Telecommunication services within Australia

### The telecommunications environment in Australia

Substantial changes have occurred in the Australian telecommunication services industry following the commencement of the *Telecommunications Act 1997* and associated legislation on 1 July 1997. The broad policy intention of the legislation is to facilitate open market competition in the supply of telecommunications infrastructure and services.

At 30 September 1998, there were 25 licensed carriers. At the end of June 1997, there had been only three. The new carriers and service providers will provide increased competition and greater consumer choice. There is now an increased reliance on self-regulation through which industry will be more responsible for its governance and conduct. At the same time, a safety net of formal regulation has been created.

### The role of the Australian Communications Authority (ACA)

The ACA was formed from the merger of AUSTEL (the Australian Telecommunications Authority) and the Spectrum Management Agency (SMA). The ACA's role is to regulate telecommunications and radio communications, and provide information and advice to the Government. The ACA has been established to promote an efficient, competitive and increasingly self-managed Australian communications industry.

In this new environment, industry groups are encouraged to develop voluntary codes of practice rather than have them imposed by government regulation. The Australian Communications Industry Forum (ACIF) has been established by the industry to develop industry codes and technical standards. These codes may be registered with the ACA, and the ACA has the power to intervene and enforce a code or, where necessary, develop a mandatory standard for the industry where a code may have failed or proves inadequate.

The ACA works closely with the ACIF to develop codes of practice for the telecommunications sector. Numerous codes are under development and all will be made or already have been made available for widespread consultation. These include codes on calling number display, providing customers with information on prices, terms and conditions, and people's propensity to change mobile telephone service providers.

The new self-regulatory environment provides all telecommunications industry participants with a level of freedom to pursue business strategies focusing on customer needs, rather than being hampered by excessive regulatory restrictions. Consumer protection has also been strengthened by arrangements to ensure that users are supplied with high quality communications services; for example, all telecommunication service providers are now required to comply with a customer service guarantee (CSG).

The CSG performance standard set by the ACA has applied from 1 January 1998. Under the CSG scheme, compensation is payable to customers if carriers/carriage service providers fail to comply with the performance standard in relation to connection of new services, rectification of faults, the keeping of appointments and other matters.

The telecommunications market has seen a proliferation of new services and technologies. This has also increased the demand for access to the radio frequency spectrum. To meet this demand and accommodate changing market conditions and product development, the ACA is making more use of market-based allocation mechanisms. The ACA has recently auctioned spectrum suitable for personal communication services, which will provide further opportunities for new and existing players in the Australian mobile communications market. The availability of this spectrum is expected to lead to increased competition, and lower prices for consumers.



As a result of the ACA's preselection determination of 29 July 1997, consumers can now choose (preselect) alternative long distance and international providers of telecommunications services without needing to dial an access code on a call-by-call basis. The ACA is also currently researching and consulting with industry about making further determinations relating to preselection.

### Telecommunications carriers and service providers

From the description of the telecommunication services industry in the Introduction, it can be seen to contain primarily three types of business—licensed telecommunications carriers, Internet service providers and other businesses which provide some other form of telecommunication services. As these types of business provide very different services, it is useful to disaggregate the whole industry into three subindustries for analysis.

As indicated earlier, the telecommunications market was deregulated from 30 June 1997. To provide some benchmark data against which to measure changes within that market, the ABS conducted a survey of businesses in the industry immediately prior to deregulation. Subsequent surveys of the businesses in the

telecommunication services industry, and of the wider Information and Communications Technologies (ICT) sector (see the article at the end of this chapter), will enable the direct measurement of change in the industry from that time.

Tables 24.2 and 24.3 shows results from the ABS survey carried out in respect of 30 June 1997, in terms of the three sub-industries: licenced carriers, Internet service providers, and other service providers.

#### Licensed carriers

As at the end of June 1997, Australia had a regime of three licensed carriers—Telstra, Optus and Vodafone. These businesses dominated the telecommunication services industry, contributing \$18.6b (91%) to total industry income. The major carrier revenues in 1996–97 comprised:

- \$9.4b from voice services;
- \$3.4b from mobile services; and
- \$2.3b from data and other services.

As indicated earlier, at 30 September 1998 there were 25 licensed carriers (network owners) operating in Australia, an increase of 22 since deregulation of the carrier market in July 1997.

#### 24.2 BUSINESS INDICATORS, By Telecommunication Services Subindustry—1996–97

	Units	Carriers	Internet service providers	Other service providers (including agents/dealers)	Total
	no.	3	296	82	381
Businesses at 30 June 1997					
Income					
Income from telecommunication services					
Voice services	\$m	9 365.7	—	654.9	10 020.6
Mobile services	\$m	3 402.6	—	439.1	3 841.7
Internet services	\$m	30.5	147.7	1.7	179.9
Data services and other telecommunication services	\$m	2 315.2	1.4	159.0	2 475.6
Total	\$m	15 114.0	149.0	1 254.8	16 517.8
Commission income	\$m	—	—	81.0	81.0
Income from rebates/incentives	\$m	—	—	54.4	54.4
Rent, leasing and hiring income	\$m	2 259.0	*0.2	87.4	2 346.6
Other income	\$m	1 241.0	7.4	239.3	1 487.7
Total Income	\$m	18 614.0	156.7	1 716.8	20 487.5
Total expenses	\$m	16 621.7	187.0	2 125.6	18 934.3
Operating profit before tax	\$m	1 996.9	–30.4	–409.7	1 556.8
Operating profit margin	%	10.8	–19.9	–24.4	7.7
Industry gross product	\$m	10 069.3	19.9	–71.2	10 018.0

Source: Telecommunication Services, Australia (Preliminary) (8148.0).

**24.3 SERVICE PROVIDERS, Expenses—1996–97**

	Internet service providers	Other service providers (including agents/dealers)
	\$m	\$m
Expenses		
Labour costs	39.0	229.8
Payments to sub-contractors and consultants	9.0	48.7
Commission/rebate expenses	2.5	88.3
Domestic interconnection expenses	32.0	686.4
International outpayments	5.0	88.2
Transmission expenses	29.2	263.3
Rent, leasing and hiring expenses	9.4	75.6
Purchases	7.3	153.0
Other expenses	53.6	492.3
<b>Total</b>	<b>187.0</b>	<b>2 125.6</b>

Source: *Telecommunication Services, Australia (Preliminary) (8148.0)*.

**Service providers**

The *Telecommunications Act 1997* allows any person to provide a range of telecommunication services, provided they comply with the provisions of the Act. Providers may use telecommunications capacity acquired from a carrier (e.g. Telstra or Optus) or, in defined circumstances, from non-carrier infrastructure, to supply a range of local or national telecommunication services to consumer and commercial markets, including public switched voice, data and value-added services, and private network services.

At the end of June 1997, there were about 378 service providers, of which the majority (296) were Internet Service Providers (ISPs). These numbers exclude businesses which provide such services as a minor part of their business operation.

Service providers typically purchase network capacity from carriers at discounted rates. In theory, this allows them to provide either similar services at competitive prices or value-added services. The statistics for 1996–97 show that only the three carriers (as a group) made an operating profit before tax. ISPs collectively made a loss of \$30m and other service providers (including agents/dealers) made a loss of \$410m.

Table 24.2 shows the broad financial results for licensed carriers, Internet service and other service providers.

It is not possible to provide a detailed dissection of the expenses shown in table 24.2 for the licensed carriers sub-industry. However, the 1996–97 ABS survey allowed such a

disaggregation to be made for the other subindustries; these are shown in table 24.3. The major expenses identified separately were labour costs, domestic interconnection expenses and transmission expenses.

**Postal communications****Australian Postal Corporation**

The Australian Postal Corporation (trading as Australia Post) is a government business enterprise owned by the Commonwealth of Australia. It operates under the *Australian Postal Corporation Act 1989*. Australia Post is independent of Government funding, achieves a substantial profit from its activities, and pays a full range of taxes and charges. In 1997–98, Australia Post paid \$295m in taxes and government charges (\$308m in 1996–97).

Australia Post offers letter and parcel delivery services within Australia and internationally. It also provides a range of related services including electronic bulk mail handling, advertising mail, bill payment, money order and banking services, express delivery services and philatelic products and services.

Australia Post's legal obligations require it to:

- provide Australians with a universal letter service;
- carry standard letters within Australia at a uniform price;
- ensure that the letter service meets the social, industrial and commercial needs of the community;

- perform its functions according to sound business practice; and
- perform its functions consistent with the Commonwealth's general policies.

Financial and other operating statistics for Australia Post are shown in tables 24.4, 24.5 and 24.6.

### Australia Post's electronic commerce services

Australia Post has 2,720 postal outlets (61% of total outlets) equipped with *giroPost* facilities for electronic banking and *Billpay* for bill payment services. Half of these outlets are in rural or

remote areas, where they service nearly 30% of the Australian population.

Australia Post's *giroPost* service provides electronic banking transactions over post office counters on behalf of 11 banks and financial institutions. In 1997–98, the volume of *giroPost* transactions increased by 15%.

Australia Post's *Billpay* facilities enable customers to pay accounts for 340 organisations, 110 more than in 1996–97. The volume of *Billpay* transactions has more than doubled since 1993–94. In 1997–98 it increased by 18%.

#### 24.4 AUSTRALIAN POSTAL CORPORATION, Consolidated Financial Statement

	1994–95	1995–96	1996–97	1997–98
\$ MILLION				
Revenue	2 754.6	2 890.4	3 109.7	3 279.1
Expenditure(a)	2 417.0	2 550.9	2 767.1	2 902.7
Operating profit before abnormals and tax	337.6	339.5	342.6	376.4
Dividends	120.0	143.0	220.0	215.0
Income tax	60.5	122.8	101.6	99.6
Other government taxes and charges(b)	193.5	183.2	206.4	195.4
Cost of Universal Service Obligations(c)	65.0	72.0	67.0	67.0
Total assets(d)	2 327.3	2 382.0	2 588.6	2 735.8
%				
Return on assets(e)	14.8	15.5	14.6	12.8

(a) Including payment of the government taxes and charges specified in footnote (b). (b) Other government taxes and charges comprise sales tax and customs duty, payroll tax, local government taxes and charges, federal excise duty, and fringe benefits tax. (c) The Universal Service Obligation ensures that all Australians have reasonable access to the letter service; this includes the delivery of standard letters by ordinary post at a uniform price even when the delivery cost is higher. (d) At 30 June of the financial years shown. (e) Operating profit before net interest and income tax divided by average total assets.

Source: Australian Postal Corporation.

#### 24.5 AUSTRALIAN POSTAL CORPORATION, Mail Delivery Network and Post Outlets

	1994–95	1995–96	1996–97	1997–98
	no.	no.	no.	no.
Households receiving mail	6 914 553	7 131 522	7 387 216	7 310 302
Businesses receiving mail	755 457	789 100	822 949	820 196
<b>Total delivery points</b>	<b>7 670 010</b>	<b>7 920 622</b>	<b>8 210 165</b>	<b>7 471 944</b>
Australia Post outlets	4 317	4 374	4 468	4 481

Source: Australian Postal Corporation.

#### 24.6 AUSTRALIAN POSTAL CORPORATION, Total Postal Articles Handled

	1993–94	1994–95	1995–96	1996–97	1997–98
	million	million	million	million	million
Posted in Australia for delivery in Australia	3 317.9	3 529.9	3 733.7	3 888.1	4 046.1
Posted in Australia for delivery overseas	146.0	146.4	159.1	157.3	165.1
Posted overseas for delivery in Australia	147.3	151.4	154.6	160.3	160.8
<b>Total articles through mail network</b>	<b>3 611.2</b>	<b>3 827.7</b>	<b>4 047.4</b>	<b>4 205.7</b>	<b>4 372.0</b>

Source: Australian Postal Corporation.

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# The information society and the information economy in Australia

## Introduction

Over recent years, Australians have become increasingly aware of the rapid advances in information and telecommunications technology and of the ways in which this has impacted on our society and economy.

Digital technology has created inextricable links between telecommunications and computing technologies, transforming the ways in which information is exchanged and accessed. It has influenced the ways in which business is conducted, and how governments and their instrumentalities interact with the business community and society generally. Personal computers and the Internet are increasingly contributing to social and economic change.

The terms 'information society' and 'information economy' have been in common use for some time and are generally taken to relate to these phenomena. The term 'information society' is mainly used to refer to the diffusion of these technologies throughout the community (business, government and households), and the term 'information economy' relates to the flow of information between economic units, the transactions that take place, and the benefits resulting from these transactions and information flows.

This article presents selected statistics relating to the information society and the information economy. It looks first at the Information and Communications Technologies (ICT) sector, which is the part of the economy that produces information and telecommunication goods and services, then it examines their use by businesses, farms and private individuals (there are no recent data for the government sector).

## The ICT sector

The ICT sector in Australia includes telecommunication services, computer services, and selected manufacturing and wholesale trade industries. While some countries also include radio and TV services within the ICT sector, this has not been done in Australia. As explained in the Introduction to this chapter, radio and TV services are covered in *Chapter 12, Culture and recreation*.

Table S6.1 provides statistics for a selection of industries considered to be the predominant contributors to the production and distribution of ICT goods and services. The table is based on ABS surveys conducted in respect of 1992–93 and 1995–96.

The scope and definitions for both surveys are broadly consistent. However, some of the apparent growth in the size of the industries between 1992–93 and 1995–96 stems from improvements in the coding and coverage of the relevant businesses. Although difficult to quantify precisely, investigations suggest that these improvements contributed about 10% to the growth in income, expenses and pre-tax profit between the surveys.

In 1995–96, total income for the industries included in the ICT sector accounted for the following proportions of the total income of the sector:

- telecommunication services industry, 38% of total income;
- ICT businesses in the wholesale trade sector, 35%;
- computer services industry, 17%; and
- ICT businesses in the manufacturing sector, 10%.

The statistics shown are the most recent available; the ABS plans to survey the ICT sector next in respect of 1998–99.

**S6.1 INCOME AND EXPENSES, Businesses in the ICT Sector**

Industry	1992--93			1995--96		
	Total income	Total expenses	Operating profit before tax	Total income	Total expenses	Operating profit before tax
	\$m	\$m	\$m	\$m	\$m	\$m
Manufacturing						
Computer and business machines	n.p.	n.p.	n.p.	1 934.5	1 910.0	90.5
Telecommunication, broadcasting and transceiving equipment	1 802.7	1 730.1	93.8	1 659.7	1 347.0	284.5
Electronic equipment n.e.c.	290.4	270.1	n.p.	99.1	97.5	*8.6
Electric cable and wire	412.3	316.4	124.3	1 072.5	1 040.0	53.7
Total	n.p.	n.p.	228.1	4 765.8	4 394.5	437.3
Wholesale trade						
Computers	4 931.5	4 828.5	167.1	12 254.9	11 741.5	581.2
Business machines and electrical and electronic equipment n.e.c.	n.p.	n.p.	n.p.	5 070.9	4 926.9	291.4
Total	n.p.	n.p.	n.p.	17 325.8	16 668.4	872.6
Telecommunication services	n.p.	n.p.	n.p.	18 733.7	15 933.6	2 781.5
Computer services	4 100.2	3 749.0	364.9	8 087.8	7 640.9	455.3
<b>Total</b>	<b>27 448.5</b>	<b>24 830.3</b>	<b>2 665.1</b>	<b>48 913.1</b>	<b>44 637.4</b>	<b>4 546.7</b>

Source: Information Technology, Australia (8126.0).

## Business use of information technology

The ABS has measured the use of computers and Internet access among businesses for June 1994 and June 1997. Both surveys excluded non-employing businesses and farms.

The proportion of employing businesses using computers increased from 49% in June 1994 to 63% in June 1997. While all large businesses (200 or more employees) and 94% of medium sized businesses (20–199 employees) used computers, the proportion for all small businesses (less than 20 employees) was 60%, and for 'micro' businesses (less than five employees) 56%.

One in three businesses had used computers for five years or more, and one in ten had used them for less than two years.

About 21% of all businesses had Internet access at June 1997 (table S6.2), though this varied by size of business: 85% of large businesses, 49% of medium sized businesses, 19% of small businesses, and 17% of micro businesses had Internet access.

About 5% of businesses had a web-site/home page at June 1997.

At June 1997, the main uses of the Internet were email (by 20% of businesses with Internet access) and information gathering (by 18%).

**S6.2 PROPORTION OF BUSINESSES USING THE INTERNET, By Size of Business—June 1997**

	Micro businesses	Other small businesses	Total small businesses	Medium businesses	Large businesses	All businesses
	%	%	%	%	%	%
Businesses with access to Internet	17	24	19	49	85	21
Businesses with web site/home page	2	7	3	18	50	5
Major uses of the Internet						
Email	15	23	18	48	79	20
Gathering information	14	20	16	43	79	18
Data transfer	8	9	8	17	44	9
Marketing	2	7	4	16	33	5
Selling	1	2	1	3	2	1
Purchasing	1	0	1	1	3	1
Voice/video communication	0	0	0	0	1	0

Source: Small and Medium Enterprises, Business Growth and Performance Survey, Australia (8141.0).

Only 1% of businesses used the Internet for selling or purchasing goods or services, indicating that Internet commerce by businesses is still very small. It currently comprises a small proportion of all electronic commerce in Australia. The number of electronic commerce transactions is large; in 1997 there were 1.5 billion such transactions in Australia. Their value was about \$16,000b, the bulk of which related to payments and clearances (valued at \$15,300b). There were 500 million EFTPOS transactions, with a total value of \$27.5b and an average value of \$55, and 600 million direct entry transactions, with a total value of \$540b and an average value of \$900. Consumer Internet transactions were valued at about \$55m.

While the ABS business surveys did not measure the proportion of employees using computers or accessing the Internet, or their intensity of use, ABS surveys of households (discussed below) have measured the number of adults (persons aged 18 or over) who said they had used a computer or accessed the Internet at work. In summary, in the twelve months to March 1998:

- about 4.3 million adults used computers at work (52% of employed adults); and about 1.4 million adults accessed the Internet at work (17% of employed adults).

## Farm use of information technology

The ABS's Agricultural Commodity Survey estimated that 45% of farms had a computer at March 1998 (table S6.3). This was almost identical to the proportion for capital city households (46%), but was significantly greater than for all other households (36%). (The latter category comprises farm households and households in regional and rural towns.)

Since farms generally comprise both households and businesses, they may be compared to households with a home-based business. While 45% of farms had computer access, the corresponding figures were 66% for all Australian home-based businesses, 70% for capital city home-based businesses, and 59% for home-based businesses in all other areas (graph S6.4).

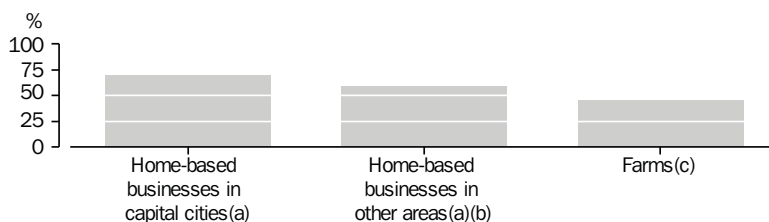
**S6.3 HOUSEHOLDS AND FARMS WITH A COMPUTER, By State/Territory—1998**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Region	%	%	%	%	%	%	%	%	%
Capital city households(a)	45.7	46.4	48.8	42.0	42.3	38.0	45.6	65.1	45.9
Other households(a)(b)	34.9	39.2	37.3	32.3	40.6	29.1	44.2	n.a.	36.4
<i>Total</i>	<i>41.4</i>	<i>44.3</i>	<i>42.4</i>	<i>39.4</i>	<i>41.9</i>	<i>32.8</i>	<i>45.1</i>	<i>65.1</i>	<i>42.4</i>
Farms(c)	45.7	42.3	41.4	47.8	53.4	41.1	55.7	59.4	44.8

(a) Estimates sourced from household surveys in February and May 1998. (b) Farm households and households in regional and rural towns. Given the small sample size of the household surveys on which the estimates are based, it is not possible to dissect them further. (c) Estimates are sourced from the Agricultural Commodity Survey, reference period March 1998.

Source: *Household Use of Information Technology, Australia (8146.0)*; and unpublished data, *Agricultural Commodity Survey*.

**S6.4 USE OF COMPUTERS BY HOME-BASED BUSINESSES—1998**



(a) Based on household surveys conducted in February and May 1998. (b) Farm households and households with a home-based business in rural towns. (c) Farm businesses are a subset of home-based businesses outside capital cities. Data sourced from the *Agricultural Commodity Survey*, reference period March 1998.

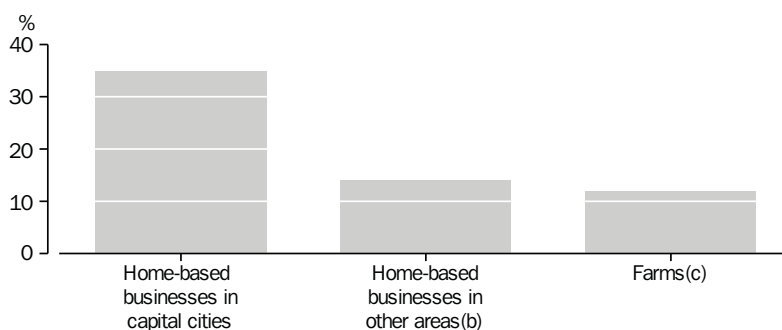
Source: *Household Use of Information Technology, Australia (8146.0)*; and unpublished data, *Agricultural Commodity Survey*.

**S6.5 HOUSEHOLDS AND FARMS WITH INTERNET ACCESS, By State/Territory—1998**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Region	%	%	%	%	%	%	%	%	%
Capital city households(a)	20.3	16.1	15.7	11.6	13.9	12.7	15.0	26.6	16.9
Other households(a)(b)	7.8	8.2	8.3	6.5	5.6	4.7	10.8	n.a.	7.7
<i>Total</i>	<i>15.4</i>	<i>13.9</i>	<i>11.6</i>	<i>10.2</i>	<i>11.8</i>	<i>8.0</i>	<i>13.6</i>	<i>26.6</i>	<i>13.5</i>
Farms(c)	13.2	10.6	11.2	13.0	10.2	13.0	23.6	20.3	11.8

(a) Estimates sourced from household surveys in February and May 1998. (b) Farm households and households in regional and rural towns. Given the small sample size of the household surveys on which the estimates are based, it is not possible to dissect them further. (c) Estimates are sourced from the Agricultural Commodity Survey, reference period March 1998.

Source: Household Use of Information Technology, Australia (8146.0); and unpublished data, Agricultural Commodity Survey.

**S6.6 HOME-BASED BUSINESSES WITH INTERNET ACCESS—March 1998(a)**

(a) Based on a number of household surveys in the period February to May 1998. (b) Farm households and households with a home-based business in rural towns. (c) Farm businesses are a subset of home-based businesses outside capital cities.

Source: Use of Information Technology in Regional Australia (8150.0).

Nearly 12% of farms were connected to the Internet at March 1998 (table S6.5 and graph S6.6). This compares with:

- 14% of all Australian households, and 27% of all home-based businesses;
- 17% of capital city households, and 35% of capital city home-based businesses; and
- 8% of households in all other areas, and 14% of home-based businesses in all other areas.

## Household use of information technology

The main dimensions of household use of information technology relate to the number of households with computers, the extent of use of computers at home, and the number of households accessing the Internet from home.

## Computer use

The statistics relating to households are an average of the results from surveys in February and May 1998 (the surveys were combined to increase their reliability).

As table 6.3 showed, about 42% of households had computers, comprising 46% of capital city households and 36% of other households. Table S6.7 shows the distribution by State/Territory and capital city/other. The ACT had by far the highest penetration rate (65%) and Tasmania the lowest (33%).

About 36% of households used a computer frequently (i.e. once a week or more). This proportion was relatively consistent across the States and Territories, except for the ACT (56%) and Tasmania (26%) (table S6.8).



Between the corresponding periods in 1996 and 1998, the proportion of households frequently using a computer increased by about 18%. This increase was relatively consistent across the States and Territories.

About 6% of households had a computer but did not use it frequently. This rate was also reasonably consistent across the States and Territories.

#### S6.7 HOUSEHOLDS WITH A COMPUTER, By State/Territory—1998

State/Territory	Region		
	Capital cities	Other	Total
	%	%	%
NSW	45.7	34.9	41.4
Vic.	46.4	39.2	44.3
Qld	48.8	37.3	42.4
SA	42.0	32.3	39.4
WA	42.3	40.6	41.9
Tas.	38.0	29.1	32.8
NT	45.6	44.2	45.1
ACT	65.1	n.a.	65.1
<b>Aust.</b>	<b>45.9</b>	<b>36.4</b>	<b>42.4</b>

Source: Household Use of Information Technology, Australia (8146.0).

#### S6.8 HOUSEHOLDS FREQUENTLY(a) USING A COMPUTER, By State/Territory

State/Territory	February, May 1998		February, May 1996
	'000	%	%
NSW	792	35.0	30.8
Vic.	642	38.2	31.5
Qld	440	34.6	29.0
SA	194	34.1	30.0
WA	229	35.1	27.7
Tas.	49	26.2	23.3
NT	*19	*41.2	*37.4
ACT	62	55.6	48.5
<b>Aust.</b>	<b>2 425</b>	<b>35.8</b>	<b>30.4</b>

(a) Once a week or more.

Source: Household Use of Information Technology, Australia (8146.0).

### Internet access

As table S6.5 indicated, 14% of Australian households had home Internet access. The ACT had the highest penetration rate (27%, nearly double the Australian average) and Tasmania the lowest (8%) (table S6.9).

As table S6.10 shows, in all States the proportion of households with Internet access was significantly higher in capital cities (17%) than elsewhere (8%).

#### S6.9 HOUSEHOLDS ACCESSING THE INTERNET FROM HOME, By State/Territory—1998

State/Territory	'000	%
NSW	347	15.4
Vic.	233	13.9
QLD	147	11.6
SA	58	10.2
WA	77	11.8
Tas.	*15	*8.0
NT	*6	*13.6
ACT	30	26.6
<b>Aust.</b>	<b>913</b>	<b>13.5</b>

Source: Household Use of Information Technology, Australia (8146.0).

#### S6.10 HOUSEHOLDS WITH HOME INTERNET ACCESS, By State/Territory—1998

State/Territory	Region		
	Capital cities	Other	Australia
	%	%	%
NSW	20.3	7.8	15.4
Vic.	16.1	8.2	13.9
Qld	15.7	8.3	11.6
SA	11.6	6.5	10.2
WA	13.9	5.6	11.8
Tas.	12.7	4.7	8.0
NT	15.0	10.8	13.6
ACT	26.6	n.a.	26.6
<b>Aust.</b>	<b>16.9</b>	<b>7.7</b>	<b>13.5</b>

Source: Household Use of Information Technology, Australia (8146.0).

**S6.11 MAIN REASONS FOR HOUSEHOLDS WITH COMPUTERS NOT HAVING HOME INTERNET ACCESS, By State/Territory—1998**

State/ Territory	Costs are too high %	Lack of interest in Internet %	Insufficient capacity/need to upgrade computer %	Adequate access outside home %	Other %	Don't know %	Total %
NSW	28.7	28.4	11.9	5.8	24.5	*0.8	100.0
Vic.	30.5	29.7	7.4	7.2	23.1	*2.1	100.0
Qld	30.1	27.5	9.7	7.8	21.2	*3.7	100.0
SA	36.2	24.6	9.0	*6.3	21.8	*2.2	100.0
WA	33.1	22.1	13.5	*5.8	23.9	*1.6	100.0
Tas.	*29.9	*23.1	*11.8	*12.8	*19.9	*2.6	100.0
NT	*32.1	*25.4	*14.1	*11.9	*15.8	*0.9	100.0
ACT	*28.9	*26.2	*10.9	*15.3	*18.2	*0.7	100.0
<b>Aust.</b>	<b>30.6</b>	<b>27.4</b>	<b>10.2</b>	<b>7.0</b>	<b>22.9</b>	<b>2.0</b>	100.0

Source: Household Use of Information Technology, Australia (8146.0).

Of households with computers, 68% did not access the Internet. Of the reasons given by households with computers for not accessing the Internet, the main ones were 'costs are too high' (31%), 'lack of interest in Internet' (27%) and 'other' (23%) which included 'lack of access to Internet service provider' and 'inadequate telecommunications infrastructure' (table S6.11).

Possession of a modem by households, as distinct from their accessing of the Internet, was measured in both 1996 and 1998 (Internet access was not measured in a comparable way between the 1996 and 1998 surveys). Table S6.12 shows that the proportion of households with a modem, and which frequently used a computer, doubled between 1996 and 1998. Nearly half of the 2.4 million households frequently using a computer in 1998 also had a modem.

**S6.12 HOUSEHOLDS WITH MODEMS(a)**

State/Territory	1998		1996
	'000	%	%
NSW	430	54.3	26.7
Vic.	291	45.3	22.0
Qld	192	43.6	23.6
SA	83	42.9	22.2
WA	107	46.8	26.2
Tas.	*20	*42.6	*11.8
NT	*9	*46.3	*24.6
ACT	36	57.9	31.1
<b>Aust.</b>	<b>1 168</b>	<b>48.2</b>	<b>24.3</b>

(a) Relates only to households frequently using a computer.

Source: Household Use of Information Technology, Australia (8146.0).

**Persons using computers and the Internet**

This section summarises some of the main characteristics of persons who use a computer, namely the number of adults (persons aged 18 and over) accessing computers from home and from work, and the age distribution of persons frequently using a home computer and of those accessing the Internet from home.

The statistics are again an average of the results from the February and May 1998 surveys.

More than 7.6 million adults (57% of the total adult population) accessed a computer from any site in the previous twelve months, 4.6 million accessing from home, and 4.3 million from work (table S6.13). Just over a million people accessed the Internet from the house of a neighbour or friend, a public library or a TAFE or some other tertiary institution.

More than 3.3 million adults accessed the Internet from any site in the same period. There was a slightly greater number of adults using the Internet from work than from home (1.4 million compared to 1.3 million).

Over 0.8 million adults accessed from the house of a neighbour or friend and 0.6 million from a TAFE or other tertiary institution.

About 5.2 million adults (62% of employed Australians) used computers for work purposes, either at work or from home. (This estimate is derived by adding to the 4.3 million adults who used computers at work from table S6.13, a further 2.5 million adults who used a computer at home for work related purposes, and adjusting for overlap. A complementary estimate for Internet use is not yet available.)

**S6.13 ADULTS ACCESSING A COMPUTER OR THE INTERNET(a)(b), By State/Territory**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
ACCESSING A COMPUTER									
	'000	'000	'000	'000	'000	'000	'000	'000	'000
Home	1 524	1 247	824	348	431	88	*35	121	4 618
Work	1 475	1 068	775	291	468	105	*47	111	4 339
Neighbour or friend's house	290	329	166	101	117	*27	*7	*32	1 068
Public library	445	368	256	120	118	*28	*11	*40	1 387
TAFE/ tertiary institution	461	297	276	97	142	*33	*10	*32	1 348
Other	300	412	2 445	109	119	*50	*14	*39	1 288
<b>Any site(c)</b>	<b>2 478</b>	<b>1 957</b>	<b>1 420</b>	<b>580</b>	<b>784</b>	<b>179</b>	<b>65</b>	<b>167</b>	<b>7 630</b>
	%	%	%	%	%	%	%	%	%
Home	33.3	36.9	33.6	31.9	33.9	26.0	*38.6	55.9	34.4
Work	32.3	31.6	31.6	26.7	36.8	30.9	*52.1	51.1	32.3
Neighbour or friend's house	6.3	9.7	6.7	9.2	9.2	*8.0	*8.2	*14.8	8.0
Public library	9.7	10.9	10.4	11.0	9.3	*8.3	*12.7	*18.5	10.3
TAFE/ tertiary institution	10.1	8.8	11.3	8.9	11.2	*9.7	*10.6	*14.8	10.1
Other	6.6	12.2	10.0	10.0	9.4	*14.7	*15.7	*17.8	9.6
<b>Any site(c)</b>	<b>54.2</b>	<b>57.9</b>	<b>57.8</b>	<b>53.2</b>	<b>61.8</b>	<b>52.9</b>	<b>72.1</b>	<b>76.9</b>	<b>56.9</b>
ACCESSING THE INTERNET									
	'000	'000	'000	'000	'000	'000	'000	'000	'000
Home	490	343	206	65	113	*19	*10	*46	1 292
Work	501	341	234	89	137	*42	*17	66	1 427
Neighbour or friend's house	231	247	135	72	112	*20	*6	*25	848
Public library	106	87	66	*17	*26	*9	*2	*16	330
TAFE/ tertiary institution	256	149	110	*35	53	*15	*5	*22	644
Other	116	127	72	*41	*33	*16	*3	*16	425
<b>Any site(c)</b>	<b>1 138</b>	<b>903</b>	<b>545</b>	<b>217</b>	<b>325</b>	<b>77</b>	<b>*29</b>	<b>115</b>	<b>3 348</b>
	%	%	%	%	%	%	%	%	%
Home	10.7	10.1	8.4	5.9	8.9	*5.7	*11.3	*21.3	9.6
Work	10.9	10.1	9.5	8.2	10.8	*12.4	*18.9	30.6	10.6
Neighbour or friend's house	5.1	7.3	5.5	6.6	8.8	*5.9	*6.5	*11.6	6.3
Public library	2.3	2.6	2.7	*1.5	*2.1	*2.7	*2.2	*7.5	2.5
TAFE/ tertiary institution	5.6	4.4	4.5	*3.2	4.1	*4.3	*5.5	*10.2	4.8
Other	2.5	3.8	3.0	*3.8	*2.6	*4.9	*3.0	*7.3	3.2
<b>Any site(c)</b>	<b>24.9</b>	<b>26.7</b>	<b>22.2</b>	<b>19.9</b>	<b>25.6</b>	<b>22.7</b>	<b>*31.9</b>	<b>52.8</b>	<b>25.0</b>

(a) Period covers 12 months leading up to the surveys of February and May 1998. (b) Proportions are of all persons 18 years and over. (c) Because access can be from more than one site, the sums of the estimates for site categories exceed the estimates for 'any site'.

Source: *Household Use of Information Technology, Australia (8146.0)*.

Averaging over the February and May 1998 surveys, nearly 5.2 million Australians aged five years and over frequently used a computer at home. This was 31% of the total population aged five years and over. The corresponding proportion in 1996 was 24% (table S6.14).

While two-thirds of the 5.2 million frequent home computer users were adults, a greater proportion of children used computers at home than did adults (50% compared to 26%). With

increasing age, a greater proportion of children, but a smaller proportion of older adults, frequently used a computer.

Table S6.15 shows that 1.3 million frequent home computer users also accessed the Internet from home (8% of all persons five years and over). Of those, 257,000 were children aged 5 to 17 years. About 13% of children aged 15 to 17 years, and 12% of those aged 10 to 14 years, frequently used a home computer and accessed the Internet.

**S6.14 PERSONS FREQUENTLY USING A HOME COMPUTER(a), By Age**

Age	'000	1998(b)	1996
		%	%
5–9 years	468	35.6	30.0
10–14 years	763	58.2	47.0
15–17 years	482	62.9	46.7
All children 5–17 years	1 714	50.5	40.3
18–24 years	634	35.0	28.3
25–39 years	1 307	31.0	22.9
40–54 years	1 220	32.1	25.4
55 years and over	303	8.5	7.2
All adults	3 464	25.8	20.2
<b>Total persons</b>	<b>5 178</b>	<b>30.8</b>	<b>24.0</b>

(a) Percentages are of all persons in each age group. (b) Period covers the 12 months leading up to the surveys of February and May.

Source: *Household Use of Information Technology, Australia (8146.0)*.

**S6.15 PERSONS FREQUENTLY USING A HOME COMPUTER AND ACCESSING THE INTERNET FROM HOME(a), By Age—1998**

Age	'000	%
5–9 years	17	1.3
10–14 years	142	11.4
15–17 years	98	12.6
All children 5–17 years	257	7.8
18–24 years	191	10.3
25–39 years	421	10.1
40–54 years	332	9.3
55 years and over	63	1.8
All adults	1 007	7.7
<b>All persons</b>	<b>1 264</b>	<b>7.8</b>

(a) Percentages are of all persons in each age group, derived from the February and May surveys.

Source: *Unpublished data, Household Use of Information Technology, 1998*.

Over one million adults frequently used a computer and also accessed the Internet from home. Younger adults were more likely to use the Internet than older ones. Over 10% of adults aged between 18 and 39 years frequently used a home computer and accessed the Internet from home. However, only 2% of persons aged 55 years or more accessed the Internet from home.

The proportion of adults purchasing goods or services through the Internet is relatively small, although it doubled between the surveys of February and May 1998. In the period June 1997 to May 1998, 400,000 Australians aged 18 or over (3% of adults) used the Internet to make one or more private purchases. Three-quarters of the adults making Internet purchases paid for them on-line, and a

similar proportion purchased them from overseas. There were about one million transactions for a total value of over \$50m. (It should be noted that the number of transactions and their value were derived from range data, and are therefore subject to fairly high degrees of error.)

## References

*Household Use of Information Technology, Australia (8146.0)*.

*Information Technology, Australia (8126.0)*.

*Small and Medium Enterprises, Business Growth and Performance Survey, Australia (8141.0)*.

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## Introduction

Science and technology directly influence the strength and competitiveness of industry by providing a basis for technological change, thereby encouraging economic growth and development.

The Department of Industry, Science and Resources is the key Commonwealth agency responsible for the development of science and technology policy in Australia. However, there are a number of other agencies, both Commonwealth and State, which have a direct interest in these science and technology policies, and in their interrelationships with other government policies relating to employment, education, industry, regional development, energy, communications and defence. There is also a range of social issues dependent on the spread of technology within Australia. These are the responsibilities of other Commonwealth and State departments.

Australia has a range of statistics relating to science and technology issues, most of which are compiled by the ABS and summarised in this chapter. The key indicators relate to Australia's research and development (R&D) effort, in terms of both expenditure on and the human resources devoted to R&D activities, and the extent to which businesses innovate.

A number of other indicators, notably patents and bibliometrics, are compiled by the Department of Industry, Science and Resources and reported in the Commonwealth Government's Science and Technology Statement. These indicators have not been included in this chapter.

## Expenditure and human resources devoted to R&D

The statistics which follow are based on the definitions of the Organisation for Economic Cooperation and Development for national R&D surveys. The OECD defines R&D to comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of people, culture and society, and the use of this stock of knowledge to devise new applications.

Statistics on the amount of expenditure and human resources devoted to R&D in the business sector are collected annually, in varying degrees of detail. Comparable statistics on the higher education, general government and private non-profit sectors are collected biennially. Tables 25.1, 25.2 and 25.3 summarise the latest statistics available for all four sectors.

**25.1 EXPENDITURE ON R&D, At Current Prices**

	1988–89	1990–91	1992–93	1994–95	1996–97
Sector	\$m	\$m	\$m	\$m	\$m
Business	1 798.3	2 099.8	2 861.9	3 498.7	4 123.9
General government					
Commonwealth	869.6	1 034.0	1 155.4	1 196.7	1 265.6
State	482.7	670.0	668.5	785.9	824.6
Total	1 352.3	1 704.0	1 823.9	1 982.6	2 090.2
Higher education(a)	1 076.8	1 332.8	1 695.2	1 829.6	2 307.6
Private non-profit	53.3	85.4	101.9	155.7	171.4
<b>Total</b>	<b>4 280.7</b>	<b>5 222.0</b>	<b>6 482.9</b>	<b>7 466.6</b>	<b>8 693.0</b>

(a) Data for calendar the year ending within the financial year shown.

Source: *Research and Experimental Development, All Sector Summary, Australia (8112.0)*.

**25.2 EXPENDITURE ON R&D, At Average 1989–90 Prices**

	1988–89	1990–91	1992–93	1994–95	1996–97
Sector	\$m	\$m	\$m	\$m	\$m
Business	1 944.9	2 000.6	2 584.7	3 070.0	3 426.5
General government					
Commonwealth	914.4	989.2	1 039.6	1 045.9	1 062.3
State	510.9	630.0	591.1	681.3	676.5
Total	1 425.3	1 619.2	1 630.7	1 727.2	1 738.8
Higher education(a)	1 159.6	1 291.6	1 531.5	1 587.0	1 909.7
Private non-profit	57.5	81.2	90.7	136.9	139.4
<b>Total</b>	<b>4 587.3</b>	<b>4 992.6</b>	<b>5 837.6</b>	<b>6 521.1</b>	<b>7 214.4</b>

(a) Data for the calendar year ending within the financial year shown.

Source: Research and Experimental Development, All Sector Summary, Australia (8112.0).

**25.3 HUMAN RESOURCES DEVOTED TO R&D, By Sector**

	1988–89	1990–91	1992–93	1994–95	1996–97
Sector	'000 person years	'000 person years	'000 person years	'000 person years	'000 person years
Business	20.8	21.0	22.9	25.7	26.1
General government					
Commonwealth	10.9	10.7	11.0	10.7	10.3
State	8.3	9.0	8.8	8.7	9.2
Total	19.2	19.7	19.8	19.4	19.5
Higher education(a)	24.9	27.1	35.4	40.1	42.7
Private non-profit	1.0	1.3	1.4	1.7	2.1
<b>Total</b>	<b>65.9</b>	<b>69.0</b>	<b>79.5</b>	<b>86.9</b>	<b>90.5</b>

(a) Data for the calendar year ending within the financial year shown.

Source: Research and Experimental Development, All Sector Summary, Australia (8112.0).

## Expenditure on R&D—how does Australia compare internationally?

The most commonly used indicator for comparison purposes is the ratio of expenditure on R&D to Gross Domestic Product. As table 25.4 shows, in 1996–97 Australia spent 1.68% of its GDP on R&D, ranking it slightly above Canada, but well below some of the leading industrialised countries such as Japan (2.83%), Korea (2.79%), the United States (2.62%), Finland (2.59%), France (2.32%), Germany (2.28%) and the United Kingdom (1.94%).

In terms of business enterprise R&D, Australia's ratio of R&D expenditure to GDP (0.80%) is again below the ratios for the large industrialised countries referred to earlier, and is also below the rate for Canada (1.03%).

For government sector R&D as a percentage of GDP Australia ranks higher. A ratio to GDP of 0.40% places it fifth in the group of OECD member countries for which data are available, behind only Iceland (0.62%), France (0.47%),

Korea (0.45%) and Finland (0.41%). Government sector R&D as a percentage of GDP is much higher for Australia than for Japan, the United States, and the United Kingdom.

For the higher education sector, Australia also ranks highly. With a ratio to GDP of 0.45%, it ranks behind only Switzerland (0.67%) and Finland (0.47%). However, the Australian ratio is very similar to the ratios for a number of other countries including Japan, Germany and Denmark.

These statistics themselves provide the background to the Australian Government's policy in the R&D area. It has been focused on finding ways in which Australian firms can be encouraged to invest in their own R&D. The policies have had a positive impact, as the ratio of business enterprise R&D to GDP has increased over the past decade from about 0.49% to the 1996–97 level of 0.80%. However, business enterprise R&D fell by 5% in 1996–97 from the 1995–96 level, the first decrease since the ABS surveys of R&D started in respect of 1976–77.



**25.4 EXPENDITURE ON R&D AS A PERCENTAGE OF GDP, OECD Countries—1996–97**

	Business	Government	Higher education	Total(a)
Country	%	%	%	%
Japan	2.01	0.27	0.42	2.83
Korea	2.04	0.45	0.26	2.79
Switzerland	1.94	0.07	0.67	2.75
United States	1.92	0.23	0.39	2.62
Finland	1.71	0.41	0.47	2.59
France	1.43	0.47	0.39	2.32
Germany	1.51	0.36	0.41	2.28
Denmark	1.25	0.32	0.42	2.01
United Kingdom	1.26	0.28	0.38	1.94
<b>Australia</b>	<b>0.80</b>	<b>0.40</b>	<b>0.45</b>	<b>1.68</b>
Canada	1.03	0.25	0.36	1.66
Iceland	0.47	0.62	0.36	1.51
Czech Republic	0.64	0.33	0.09	1.07
Italy	0.56	0.22	0.25	1.03
Spain	0.42	0.16	0.28	0.87
Poland	0.31	0.24	0.21	0.76
Turkey	0.12	0.05	0.28	0.45

(a) Includes private non-profit.

Source: Research and Experimental Development, Business Enterprises, Australia (8104.0); Research and Experimental Development, General Government and Private Non-Profit Organisations, Australia (8109.0); Research and Experimental Development, Higher Education Organisations, Australia (8111.0); and Research and Experimental Development, All Sector Summary, Australia (8112.0).

### Sources of funds for expenditure on R&D

In 1996–97, the business enterprise sector funded 47% of all Australian R&D. This compares with 37% recorded in 1986–87. The Commonwealth Government funded 39% of R&D in 1996–97 (down from 50% in 1986–87) and the State Governments funded 8% in 1996–97 (down from 10% in 1986–87).

In 1996–97, 93% of funding for R&D carried out by businesses came from the business sector, and it has remained at about this level for the past decade. Commonwealth government organisations provided 3% of funding for business R&D expenditure in 1996–97.

About 87% of Commonwealth government sector R&D was funded by Commonwealth government organisations in 1996–97. The Commonwealth government proportion of self-funding has dropped from 96% over the past decade, with the business sector and the private non-profit sector making up most of the remainder, now contributing 6% and 5% respectively.

About 72% of State government R&D was funded by State government organisations in 1996–97. This is significantly lower than a decade earlier, when the proportion was 82%. The private non-profit sector now funds 14% of the State government R&D, an increase from 4% a decade earlier.

About 88% of higher education R&D funding came from the Commonwealth Government (90% in 1986–87). Business enterprises provided 5% of the funding in 1996–97, up from 2% a decade earlier.

Commonwealth government organisations funded 29% of the R&D of the private non-profit sector in 1996–97, while the contribution by State Governments was 11%.

Tables 25.5 and 25.6 show the data for 1986–87 and 1996–97.

**25.5 EXPENDITURE ON R&D, Sector by Source of Funds—1986–87**

Sector	Commonwealth Government		State Government		Businesses		Private non-profit and other Australian(a)		Overseas		Total
	\$m	% of total	\$m	% of total	\$m	% of total	\$m	% of total	\$m	% of total	\$m
Business	62.0	4.9	3.9	0.3	1 190.0	93.7	0.7	0.1	12.9	1.0	1 269.6
General government											
Commonwealth	754.4	96.0	3.8	0.5	22.9	2.9	0.5	0.1	4.4	0.6	785.9
State	30.5	8.5	294.6	82.3	18.0	5.0	14.1	3.9	0.8	0.2	357.9
Total	784.9	104.5	298.4	82.8	40.9	7.9	14.6	4.0	5.2	0.8	1 143.8
Higher education(b)	795.3	90.2	12.0	1.4	18.5	2.1	49.5	5.6	6.4	0.7	881.7
Private non-profit	20.0	37.9	6.7	12.7	2.5	4.7	19.1	36.2	4.5	8.5	52.8
<b>Total</b>	<b>1 662.2</b>	<b>49.6</b>	<b>321.0</b>	<b>9.6</b>	<b>1 251.8</b>	<b>37.4</b>	<b>83.9</b>	<b>2.5</b>	<b>29.0</b>	<b>0.9</b>	<b>3 347.9</b>

(a) Includes funds provided via government levies. (b) Data for calendar year 1986.

Source: Research and Experimental Development, All Sector Summary, Australia (8112.0).

**25.6 EXPENDITURE ON R&D, Sector by Source of Funds—1996–97**

Sector	Commonwealth Government		State Government		Businesses		Private non-profit and other Australian(a)		Overseas		Total
	\$m	% of total	\$m	% of total	\$m	% of total	\$m	% of total	\$m	% of total	\$m
Business	101.6	2.5	4.8	0.1	3 817.9	92.6	65.4	1.6	134.2	3.3	4 123.9
General government											
Commonwealth	1 105.2	87.3	9.1	0.7	76.6	6.1	61.6	4.9	13.1	1.0	1 265.6
State	64.7	7.8	596.6	72.4	42.3	5.1	115.3	14.0	5.7	0.7	824.6
Total	1 169.9	95.1	605.7	73.1	118.9	11.2	176.9	18.9	18.8	1.7	2 090.2
Higher education(b)	2 033.1	88.1	51.0	2.2	120.7	5.2	78.2	3.4	24.6	1.1	2 307.6
Private non-profit	49.0	28.6	18.1	10.6	29.9	17.4	67.9	39.6	6.5	3.8	171.4
<b>Total</b>	<b>3 353.6</b>	<b>38.6</b>	<b>679.6</b>	<b>7.8</b>	<b>4 087.4</b>	<b>47.0</b>	<b>388.3</b>	<b>4.5</b>	<b>184.1</b>	<b>2.1</b>	<b>8 693.0</b>

(a) Includes funds provided via government levies. (b) Data for calendar year 1996.

Source: Research and Experimental Development, All Sector Summary, Australia (8112.0).

**Business sector**

Business expenditure on R&D in Australia in 1996–97 (table 25.7) fell for the first time since the ABS surveys of R&D commenced, in respect of 1976–77. Expenditure fell by 5% in 1996–97 compared to 1995–96, and human resources devoted to R&D fell by 3%.

The decrease in R&D expenditure was mainly attributable to industry sectors other than Mining and Manufacturing. The Mining industry recorded a 4% increase in expenditure and the Manufacturing industry recorded a fall of only 1%. Other industries in total recorded a 15% fall, with large decreases occurring in the Finance and insurance industry (down 22%) and the Property and business services industry (down 17%).

In terms of socio-economic objectives (table 25.8), most business sector R&D expenditure was directed towards Economic development (\$3,693m, or 90%). Of this, \$2,054m was directed towards Manufacturing, \$515m towards Information and communication services, and \$467m to Mineral resources (excluding energy).

About 5% was directed towards Defence, 3% to Society, 2% to Environment and 1% to Advancement of knowledge.

A similar pattern applied to human resources devoted to R&D, with 23,200 person years (89%) directed to Economic development and, within that, 13,400 person years directed towards Manufacturing.

## 25.7 BUSINESSES, R&amp;D Resources by Industry of Business

Industry of businesses	Businesses			Expenditure on R&D			Effort on R&D		
	1994-95	1995-96	1996-97	1994-95	1995-96	1996-97	1994-95	1995-96	1996-97
	no.	no.	no.	\$m	\$m	\$m	'000 person years	'000 person years	'000 person years
Mining (including services to mining)	102	135	117	303	524	546	1.0	1.1	1.1
Manufacturing									
Food, beverage and tobacco	175	195	179	140	289	227	1.1	1.3	1.3
Textile, clothing, footwear and leather	62	66	65	28	26	22	0.2	0.2	0.2
Wood and paper product	45	37	35	79	184	190	0.3	0.3	0.2
Printing, publishing and recorded media	44	53	47	15	21	17	0.2	0.2	0.2
Petroleum, coal, chemical and associated product	362	373	348	318	349	321	2.4	2.5	2.4
Non-metallic mineral product	77	90	85	45	82	67	0.4	0.4	0.5
Metal product	244	254	220	324	337	371	2.0	2.0	1.7
Motor vehicle and part and other transport equipment	144	151	146	332	405	397	2.0	2.3	2.7
Photographic and scientific equipment	113	119	114	114	119	80	1.0	1.1	0.8
Electronic and electrical equipment and appliance	444	454	432	416	494	587	3.9	4.0	4.4
Industrial machinery and equipment	293	321	309	93	128	137	1.1	1.2	1.2
Other manufacturing	94	97	94	19	21	18	0.2	0.2	0.2
<i>Total manufacturing</i>	<i>2 097</i>	<i>2 210</i>	<i>2 074</i>	<i>1 924</i>	<i>2 453</i>	<i>2 434</i>	<i>14.8</i>	<i>15.8</i>	<i>15.9</i>
Other industries									
Wholesale and retail trade	262	255	242	193	220	201	1.6	1.6	1.4
Finance and insurance	36	37	39	101	121	94	1.0	1.2	1.1
Property and business services	676	761	704	598	617	514	5.0	5.1	4.7
Scientific research	77	83	86	118	149	152	0.9	0.9	1.0
Other n.e.c.	137	152	145	262	238	183	1.4	1.3	0.9
<i>Total other industries</i>	<i>1 188</i>	<i>1 288</i>	<i>1 216</i>	<i>1 272</i>	<i>1 345</i>	<i>1 144</i>	<i>9.9</i>	<i>10.1</i>	<i>9.1</i>
<b>Total all industries</b>	<b>3 387</b>	<b>3 633</b>	<b>3 407</b>	<b>3 499</b>	<b>4 321</b>	<b>4 124</b>	<b>25.7</b>	<b>27.0</b>	<b>26.1</b>

Source: Research and Experimental Development, Business Enterprises, Australia (8104.0).

## 25.8 BUSINESSES, R&amp;D Resources by Socio-economic Objective—1996–97

	Type of expenditure				Human resources '000 person years
	Capital expenditure	Labour costs	Other current expenditure	Total	
Socio-economic objective	\$m	\$m	\$m	\$m	
Defence	18.3	69.7	105.4	193.4	1.0
Economic development					
Plant—production and primary products	3.1	15.9	13.8	32.8	0.3
Animal—production and primary products	3.9	9.9	12.6	26.4	0.2
Mineral resources (excl. energy)	103.2	83.8	279.9	466.9	1.2
Energy resources	30.7	41.2	139.2	211.1	0.5
Energy supply	26.3	29.3	30.2	85.8	0.5
Manufacturing	227.6	779.6	1 046.7	2 053.9	13.4
Construction	4.4	20.6	20.0	45.1	0.4
Transport	5.9	42.9	44.0	92.9	0.8
Information and communication services	30.7	278.2	206.3	515.2	4.4
Commercial services	32.4	81.5	42.1	156.0	1.4
Economic framework	0.3	5.0	1.5	6.8	0.1
Total economic development	468.6	1 388.0	1 836.3	3 692.9	23.2
Society					
Health	7.2	45.7	49.8	102.7	0.8
Education and training	0.2	1.5	0.7	2.4	0.0
Social development and community services	1.5	7.1	4.3	12.8	0.1
Total society	8.9	54.3	54.7	117.9	0.9
Environment					
Environmental knowledge	4.5	8.1	13.1	25.8	0.2
Environmental aspects of economic development	6.3	11.8	12.7	30.7	0.2
Environmental management and other aspects	1.4	6.0	8.0	15.4	0.1
Total environment	12.3	25.9	33.8	71.9	0.5
Advancement of knowledge	4.8	26.9	16.0	47.7	0.5
Total	512.9	1 564.8	2 046.2	4 123.9	26.1

Source: Research and Experimental Development, Business Enterprises, Australia (8104.0).

## General government sector

Expenditure on R&D carried out by general government organisations in Australia in 1996–97 was estimated to be \$2,090m at current prices, an increase of 5% over expenditure in 1994–95 (table 25.1). At average 1989–90 prices, expenditure in 1996–97 increased by less than 1% over expenditure in 1994–95 (table 25.2).

As shown in table 25.9, the socio-economic objectives of most government R&D expenditure were: Economic development (\$1,132m, or 54%), Environment (\$412m, or 20%), Society (\$249m, or 12%) and Defence (\$234m, or 11%).

Within Economic development, the main objectives were Plant production and primary products (\$294m), Animal production and primary products (\$280m) and Manufacturing (\$212m). Within Society, the main objective was Health (\$199m). Labour costs continue to be the main component of R&D expenditure (49% of total expenditure), up from 46% in 1994–95.

Much the same pattern applies in terms of the human resources devoted to R&D (table 25.10), with Economic development again the main objective (10,300 person years, 53% of the total).

**25.9 GENERAL GOVERNMENT ORGANISATIONS, Expenditure on R&D by Socio-economic Objective—1996–97**

	Land and buildings	Other capital expenditure	Labour costs	Other current expenditure	Total
Socio-economic objective	\$m	\$m	\$m	\$m	\$m
Defence	8.9	25.0	120.5	79.7	<b>234.0</b>
Economic development					
Plant—production and primary products	18.5	10.4	150.9	114.0	<b>293.8</b>
Animal—production and primary products	17.3	11.5	135.3	116.2	<b>280.2</b>
Mineral resources (excluding energy)	10.6	4.1	38.1	30.2	<b>83.0</b>
Energy resources	30.6	2.6	24.7	35.9	<b>93.8</b>
Energy supply	2.1	1.0	12.8	8.1	<b>24.0</b>
Manufacturing	11.8	11.5	113.3	75.2	<b>211.8</b>
Construction	1.7	1.7	19.9	12.6	<b>35.9</b>
Transport	0.6	1.0	7.9	6.1	<b>15.7</b>
Information and communication services	3.3	3.6	23.0	14.8	<b>44.7</b>
Commercial services	0.6	0.9	5.7	3.5	<b>10.7</b>
Economic framework	0.6	1.4	22.8	13.8	<b>38.6</b>
Total economic development	97.4	49.7	554.5	430.5	<b>1 132.0</b>
Society					
Health	4.0	11.5	113.0	70.7	<b>199.2</b>
Education and training	0.3	1.1	7.0	5.2	<b>13.6</b>
Social development and community services	3.0	1.0	21.0	11.4	<b>36.4</b>
Total society	7.3	13.6	141.1	87.3	<b>249.3</b>
Environment					
Environmental knowledge	28.8	12.1	114.5	125.4	<b>280.8</b>
Environmental aspects of economic development	6.1	4.4	47.0	36.6	<b>94.2</b>
Environmental management and other aspects	4.7	2.1	16.3	14.4	<b>37.4</b>
Total environment	39.5	18.6	177.7	176.5	<b>412.4</b>
Advancement of knowledge					
Natural sciences, technologies and engineering	6.6	7.4	23.5	18.5	<b>56.1</b>
Social sciences and humanities	0.7	0.2	3.4	2.2	<b>6.4</b>
Total advancement of knowledge	7.3	7.6	26.9	20.7	<b>62.5</b>
<b>Total</b>	<b>160.4</b>	<b>114.5</b>	<b>1 020.7</b>	<b>794.6</b>	<b>2 090.2</b>

Source: Research and Experimental Development, General Government and Private Non-profit Organisations, Australia (8109.0).

**25.10 GENERAL GOVERNMENT ORGANISATIONS, Human Resources Devoted to R&D by Type of Employee by Socio-economic Objective—1996–97**

	Researchers	Technicians	Other supporting staff	Total
	'000 person years	'000 person years	'000 person years	'000 person years
Socio-economic objective				
Defence	1.3	0.5	0.2	<b>2.0</b>
Economic development				
Plant—production and primary products	1.3	1.3	0.5	<b>3.1</b>
Animal—production and primary products	1.1	1.1	0.6	<b>2.8</b>
Mineral resources (excluding energy)	0.2	0.2	0.2	<b>0.6</b>
Energy resources	0.2	0.1	0.1	<b>0.4</b>
Energy supply	0.1	0.1	0.1	<b>0.2</b>
Manufacturing	0.6	0.7	0.6	<b>1.9</b>
Construction	0.1	0.1	0.1	<b>0.3</b>
Transport	0.1	0.0	0.0	<b>0.1</b>
Information and communication services	0.2	0.1	0.1	<b>0.3</b>
Commercial services	0.0	0.0	0.0	<b>0.1</b>
Economic framework	0.3	0.1	0.1	<b>0.4</b>
Total economic development	4.3	3.8	2.2	<b>10.3</b>
Society				
Health	1.6	1.0	0.3	<b>3.0</b>
Education and training	0.1	0.0	0.0	<b>0.1</b>
Social development and community services	0.3	0.1	0.1	<b>0.4</b>
Total society	2.0	1.1	0.4	<b>3.5</b>
Environment				
Environmental knowledge	1.0	0.7	0.4	<b>2.1</b>
Environmental aspects of economic development	0.3	0.3	0.2	<b>0.8</b>
Environmental management and other aspects	0.2	0.1	0.0	<b>0.3</b>
Total environment	1.4	1.2	0.6	<b>3.2</b>
Advancement of knowledge				
Natural sciences, technologies and engineering	0.2	0.2	0.1	<b>0.5</b>
Social sciences and humanities	0.0	0.0	0.0	<b>0.1</b>
Total advancement of knowledge	0.3	0.2	0.1	<b>0.5</b>
<b>Total</b>	<b>9.2</b>	<b>6.7</b>	<b>3.6</b>	<b>19.5</b>

Source: Research and Experimental Development, General Government and Private Non-profit Organisations, Australia (8109.0).

## Higher education sector

Estimated expenditure on R&D carried out in Australia by the higher education sector in 1996 was \$2,308m, an increase of 13% over expenditure in 1995, and 26% over expenditure in 1994 (table 25.1). At average 1989–90 prices, expenditure increased by 11% over expenditure in 1995 and 20% over expenditure in 1994 (table 25.2).

Table 25.11 shows that the socio-economic objectives towards which most higher education R&D expenditure was directed in 1996 were Advancement of knowledge (\$1,062m, or 46% of

total expenditure), Society (\$582m, or 25%) and Economic development (\$485m, or 21%). Within the Society objective, Health accounted for \$413m, or 18% of total R&D expenditure for this sector. Direct labour costs accounted for 45% of total R&D expenditure.

Human resources devoted to R&D (table 25.12) were directed to Advancement of knowledge (20,600 person years, or 48% of the total), followed by the Society objective (10,500 person years, or 25%).

**25.11 HIGHER EDUCATION ORGANISATIONS, By Type of Expenditure on R&D by Socio-economic Objective—1996**

	Land and buildings	Other capital expenditure	Direct labour costs	Scholarships	Other current expenditure	Total
	\$m	\$m	\$m	\$m	\$m	\$m
Socio-economic objective						
Defence	0.0	0.5	3.2	0.3	3.2	<b>7.2</b>
Economic development						
Plant—production and primary products	1.7	3.9	28.9	3.4	32.5	<b>70.4</b>
Animal—production and primary products	1.1	2.4	20.3	2.5	23.6	<b>49.9</b>
Mineral resources (excluding energy)	0.3	2.4	12.4	2.5	19.2	<b>36.7</b>
Energy resources	0.2	1.2	6.8	0.8	8.0	<b>17.0</b>
Energy supply	0.1	1.7	10.0	1.3	9.8	<b>22.9</b>
Manufacturing	1.9	7.5	39.0	6.7	45.2	<b>100.4</b>
Construction	2.2	1.9	14.8	2.2	11.2	<b>32.3</b>
Transport	0.2	0.5	5.4	0.6	4.0	<b>10.7</b>
Information and communication services	0.2	3.0	21.7	2.4	18.8	<b>46.2</b>
Commercial services	0.6	0.7	7.1	0.5	5.5	<b>14.4</b>
Economic framework	0.7	2.7	43.0	4.1	34.0	<b>84.5</b>
Total economic development	9.1	27.9	209.4	27.1	211.7	<b>485.2</b>
Society						
Health	5.1	18.2	199.1	15.5	175.6	<b>413.5</b>
Education and training	1.1	4.9	52.0	4.3	43.0	<b>105.3</b>
Social development and community services	0.3	2.8	30.2	2.5	27.4	<b>63.3</b>
Total society	6.5	25.9	281.3	22.3	246.0	<b>582.1</b>
Environment						
Environmental knowledge	3.0	7.2	49.2	6.4	51.0	<b>116.7</b>
Environmental aspects of economic development	0.2	1.6	12.5	1.6	12.5	<b>28.3</b>
Environmental management and other aspects	0.5	1.4	10.8	1.4	11.7	<b>25.7</b>
Total environment	3.6	10.2	72.4	9.4	75.2	<b>170.8</b>
Advancement of knowledge						
Natural sciences, technologies and engineering	23.9	57.1	312.5	39.1	293.9	<b>726.5</b>
Social sciences and humanities	4.3	9.4	170.4	21.8	130.1	<b>335.9</b>
Total advancement of knowledge	28.2	66.4	482.8	60.9	424.0	<b>1 062.3</b>
<b>Total</b>	<b>47.4</b>	<b>131.0</b>	<b>1 049.1</b>	<b>119.9</b>	<b>960.1</b>	<b>2 307.6</b>

Source: Research and Experimental Development, Higher Education Organisations, Australia (8111.0).

**25.12 HIGHER EDUCATION ORGANISATIONS, Human Resources Devoted to R&D by Type of Employee  
by Socio-economic Objective—1996**

	Researchers		Supporting staff	<b>Total</b> <b>'000</b> <b>person</b> <b>years</b>
	Academics	Postgraduates		
	'000 person years	'000 person years	'000 person years	
Socio-economic objective				
Defence	0.0	0.1	0.0	<b>0.1</b>
Economic development				
Plant—production and primary products	0.3	0.6	0.3	<b>1.2</b>
Animal—production and primary products	0.2	0.4	0.2	<b>0.8</b>
Mineral resources (excluding energy)	0.1	0.2	0.1	<b>0.4</b>
Energy resources	0.1	0.2	0.0	<b>0.3</b>
Energy supply	0.1	0.2	0.1	<b>0.4</b>
Manufacturing	0.4	1.0	0.3	<b>1.7</b>
Construction	0.2	0.4	0.1	<b>0.6</b>
Transport	0.1	0.1	0.0	<b>0.2</b>
Information and communication services	0.3	0.4	0.1	<b>0.9</b>
Commercial services	0.1	0.2	0.0	<b>0.3</b>
Economic framework	0.6	1.0	0.2	<b>1.7</b>
Total economic development	2.4	4.7	1.4	<b>8.5</b>
Society				
Health	2.1	2.9	1.6	<b>6.5</b>
Education and training	0.6	1.7	0.3	<b>2.7</b>
Social development and community services	0.4	0.8	0.2	<b>1.3</b>
Total society	3.1	5.4	2.0	<b>10.5</b>
Environment				
Environmental knowledge	0.5	1.1	0.4	<b>2.1</b>
Environmental aspects of economic development	0.1	0.3	0.1	<b>0.5</b>
Environmental management and other aspects	0.1	0.3	0.1	<b>0.5</b>
Total environment	0.8	1.7	0.6	<b>3.1</b>
Advancement of knowledge				
Natural sciences, technologies and engineering	3.4	6.3	2.4	<b>12.1</b>
Social sciences and humanities	2.0	5.8	0.7	<b>8.5</b>
Total advancement of knowledge	5.4	12.0	3.1	<b>20.6</b>
<b>Total</b>	<b>11.7</b>	<b>23.8</b>	<b>7.3</b>	<b>42.7</b>

Source: Research and Experimental Development, Higher Education Organisations, Australia (8111.0).



### Private non-profit sector

Expenditure on R&D carried out by private non-profit organisations in 1996–97 (\$171m) increased by 10% at current prices (table 25.1) and 2% at average 1989–90 prices (table 25.2) over 1994–95 expenditure.

Health was the leading socio-economic objective for R&D expenditure of the private non-profit sector, accounting for \$138m (80%) of the

sector's total R&D expenditure in 1996–97. Labour costs continued to be the main component of R&D expenditure (51%) (table 25.13).

Health was also the leading socio-economic objective in terms of human resource usage. Table 25.14 shows the human resources devoted to R&D in terms of socio-economic objective, by type of employee. Researchers predominated, with 1,193 person years, 56% of the total.

**25.13 PRIVATE NON-PROFIT ORGANISATIONS, By Type of Expenditure on R&D by Socio-economic Objective—1996–97**

	Land and buildings	Other capital expenditure	Labour costs	Other current expenditure	Total
	\$m	\$m	\$m	\$m	\$m
Socio-economic objective	—	—	—	—	—
Defence	—	—	—	—	—
Economic development	0.2	0.3	3.4	2.2	6.0
Society					
Health	7.7	11.0	70.0	49.1	137.9
Education and training	0.1	0.3	3.6	3.3	7.2
Social development and community services	0.0	0.1	1.2	1.1	2.3
Total society	7.8	11.4	74.8	53.5	147.5
Environment	0.0	0.1	1.5	1.0	2.5
Advancement of knowledge	0.2	1.3	8.0	5.8	15.4
Total	8.2	13.1	87.6	62.4	171.4

Source: Research and Experimental Development, General Government and Private Non-profit Organisations, Australia (8109.0).

**25.14 PRIVATE NON-PROFIT ORGANISATIONS, Human Resources Devoted to R&D by Type of Employee by Socio-economic Objective—1996–97**

	Researchers	Technicians	Other supporting staff	Total
	person years	person years	person years	person years
Socio-economic objective	—	—	—	—
Defence	—	—	—	—
Economic development	48	13	11	72
Society				
Health	960	550	229	1 739
Education and training	38	9	8	55
Social development and community services	17	2	3	22
Total society	1 015	561	240	1 816
Environment	41	1	5	47
Advancement of knowledge	90	80	17	188
Total	1 193	657	274	2 124

Source: Research and Experimental Development, General Government and Private Non-profit Organisations, Australia (8109.0).

## Innovation statistics

Innovation is a measure of the extent to which science and technology are used within businesses to create new products or to implement new processes for the provision of goods and services. Innovation surveys provide a wider measure of the innovation process than do R&D surveys.

The ABS has conducted two surveys of innovation, the first in respect of 1993–94 and a second, more comprehensive survey, in respect of 1996–97. These surveys have been based on the concepts and standard questions developed jointly by the OECD and Eurostat (the statistical office for the European community). While the main ABS innovation surveys obtained data from manufacturing businesses, exploratory surveys have also been conducted for the mining, agriculture, construction and telecommunications industries.

The statistics which follow present some of the main findings from the ABS innovation surveys of manufacturing businesses only. The data include the proportion of businesses which innovate, some characteristics of innovating businesses, the reasons why businesses innovate and also some of the reasons why some businesses do not. The data are presented by business size, where small businesses are defined as those having less than 20 employees, medium sized businesses as those having 20 to 199 employees, and large businesses as those having 200 or more employees. The survey results relate only to businesses with employees.

As can be seen in table 25.15, just over a quarter of all manufacturing businesses were identified as undertaking technological innovation in 1996–97. The rate of technological innovation

had a strong relationship with size of business. Large businesses were over three times more likely to undertake technological innovation than small businesses.

Of businesses which undertook technological innovation, over half undertook both product and process innovation (i.e. they introduced new, or significantly technologically changed products and used new, or significantly technologically changed processes to produce their products). Only 3% of businesses introduced new processes without introducing new products. Over 8% of businesses introduced new products without using new processes.

In 1996–97, the rate of technological innovation was lower than in 1993–94, when almost one-third of manufacturing businesses undertook technological innovation. This decline was largely due to the drop in the rate of small businesses undertaking technological innovation from 28% in 1993–94 to 22% in 1996–97.

Even though only just over a quarter of manufacturing businesses undertook technological innovation, because of the higher proportion of larger businesses, innovative businesses in total contributed about two-thirds of the total employment and three-quarters of the total turnover of all manufacturing businesses.

Large businesses were better placed in their staffing to undertake innovation activities. Almost two-thirds of large businesses had staff dedicated to innovation work, while less than one-quarter of small businesses had staff dedicated to this work. Large businesses were almost three times more likely than small businesses to take staff off-line to undertake innovation work.

**25.15 MANUFACTURING BUSINESSES, Proportion Undertaking Technological Innovation by Business Size—1996–97**

Business size	Technological innovation			
	Product only	Process only	Product and process	Total
	%	%	%	%
Small	7.7	2.6	11.3	21.6
Medium	11.3	5.9	37.7	55.0
Large	10.4	5.8	64.0	80.2
<b>All</b>	<b>8.1</b>	<b>3.0</b>	<b>14.8</b>	<b>26.0</b>

Source: *Innovation in Manufacturing, Australia (8116.0)*.

## Barriers to starting technological innovation

Regardless of whether or not a business was already undertaking technological innovation, over two thirds of all manufacturing businesses reported that there were barriers hindering them from starting technological innovation projects. Interestingly, a higher portion (95%) of businesses already undertaking technological innovation than the proportion (58%) of businesses not currently undertaking any innovation indicated that there were factors inhibiting them from starting innovation projects.

As table 25.16 shows, the factors most frequently identified as important barriers to starting innovation projects were 'government policy and taxation' and 'current economic climate not conducive to innovation'. These were followed by 'insufficient retained earnings' and 'potential market already dominated by established businesses'. Small businesses rated 'government policy and taxation' as the most important barrier. 'current economic climate not conducive to innovation' was rated highest by medium sized businesses, and 'excessive economic risk perceived by this business or parent company' was rated highest by large businesses.

## Abandoned innovation projects

Only a very small percentage of businesses (9%) reported abandoning technological innovation projects. The proportion of businesses with abandoned projects ranged from 7% of small businesses to 42% of large businesses. Less than one in ten of those businesses who abandoned an innovation project reported that they were unable or made no attempt to successfully complete another technological innovation project in 1996–97.

On average, one quarter of the innovation projects started by a business were abandoned. This average was almost constant across the different categories of business size. The main reasons reported for abandoning innovation projects were: 'costs too high or hard to control' and 'competing resources or priorities'. These were the most frequently identified reasons among both small and medium businesses. However, large businesses identified 'long payback period' and 'expected low returns' more often than either of these reasons.

**25.16 BARRIERS TO STARTING TECHNOLOGICAL INNOVATION—1996–97**

Barrier	Business size			
	Small	Medium	Large	All
	%	%	%	%
Potential market already dominated	33.8	48.2	56.2	<b>35.6</b>
Current economic climate	39.4	49.9	45.8	<b>40.6</b>
Market too small or unknown	28.1	46.3	54.7	<b>30.4</b>
Innovation project too large	16.5	27.4	34.0	<b>17.9</b>
Excessive risk perceived by business/parent company	30.3	47.1	64.7	<b>32.6</b>
Excessive risk perceived by financiers/investors	17.9	33.0	26.3	<b>19.6</b>
Insufficient funds to recruit staff	30.2	25.4	17.6	<b>29.5</b>
Lack of appropriate sources of finance	32.5	35.0	19.6	<b>32.6</b>
Insufficient retained earnings	36.0	37.7	24.6	<b>36.0</b>
Government standards and regulations	29.5	37.6	37.6	<b>30.5</b>
Government policy and taxation	40.3	43.7	43.4	<b>40.7</b>

Source: *Innovation in Manufacturing, Australia* (8116.0).

**25.17 OBJECTIVES OF UNDERTAKING TECHNOLOGICAL INNOVATION**

Objective	Importance of the objective		
	Not applicable	Not important	Important
	%	%	%
Reducing costs	4.1	3.9	92.0
Maximising profits	*4.4	*3.7	91.9
Improving productivity	6.2	4.7	89.2
Responsiveness to customers	6.0	6.3	87.7
Improving quality/speed of service	6.9	5.5	87.6
Increasing market share	7.3	8.1	84.6
Being at industry forefront	11.7	8.3	79.9
Expanding product range	10.7	10.3	79.1
Improving staff safety/working conditions	11.2	10.1	78.7
Establishing a new market	10.8	11.5	77.7
Being environmentally aware	16.0	14.4	69.6
Meeting Government standards/regulations	13.4	17.2	69.5
Seeking/expanding export opportunities	31.8	17.7	50.6

Source: *Innovation in Manufacturing, Australia (8116.0)*.

### Objectives of undertaking technological innovation

As table 25.17 shows, most businesses (around 90%) undertaking technological innovation rated 'reducing costs', 'maximising profits' and 'Improving productivity' as important objectives of undertaking technological innovation. Most of the objectives listed in the table were considered important by a large majority of businesses.

### Costs of undertaking innovation

The total amount spent by manufacturing businesses on technological innovation during 1996–97 was \$3.9b. About half of this was spent on research and development (\$2.0b). A further \$1.1b was spent on tooling-up, industrial engineering and start up.

On average, businesses with expenditure on innovation activities spent \$296,100 on innovation, or \$6,300 per employee. As would be expected, expenditure on innovation increased with size of business; expenditure ranged from an average of \$61,000 for small businesses to \$4.1m for large businesses. The average innovation expenditure per employee showed the reverse trend, ranging from \$8,900 for small businesses to \$5,600 for large businesses. Similarly, the ratio of innovation expenditure to the total turnover of the business fell as size of business increased. For small businesses, 7% of their total turnover was spent on innovative activities, while large businesses spent only 2% of their total turnover on such activities (table 25.18).

**25.18 COSTS OF UNDERTAKING TECHNOLOGICAL INNOVATION(a)**

Business size	Turnover per employee	Innovation costs per employee	Innovation costs as a proportion of turnover
	\$'000	\$'000	%
Small	132	9	7
Medium	185	7	4
Large	266	6	2
<b>All</b>	<b>238</b>	<b>6</b>	<b>3</b>

(a) Restricted to businesses with innovation expenditure.

Source: *Innovation in Manufacturing, Australia (8116.0)*.

**25.19 BUSINESS PERFORMANCE, Effects of Innovation Activity**

Aspect affected	Proportion of technological innovators	
	Decrease %	Increase %
Employment levels		
Management	*3.0	12.5
Research	0.3	6.8
Technical	0.5	12.7
Production	6.3	32.7
Marketing	*1.9	12.6
Administration	3.0	12.9
External consultants	0.9	9.8
Production activities		
Production levels	2.1	61.4
Cleaner production process	**0.8	26.6
Labour usage	16.7	28.8
Materials consumption	9.8	37.4
Energy consumption	8.2	30.0
Wastage	21.1	15.0
Capital utilisation	*2.3	32.8
Maintenance support	3.9	16.9
Profitability	7.3	38.1

Source: *Innovation in Manufacturing, Australia (8116.0)*.

### Effects of technological innovation on business activities and performance

While it is very difficult to quantify the specific effects of undertaking technological innovation, data about the perception by businesses of this effect were collected in the surveys. Businesses were asked to indicate whether undertaking technological innovation had affected their employment, production activities and profitability. Table 25.19 shows the proportions of innovating businesses reporting increases and decreases in these aspects of their business from undertaking innovation activities. The majority of businesses reported positive effects on all of these aspects.

About half of the businesses reported that undertaking technological innovation had affected the employment of the business. An increase in staffing levels was most commonly reported for all types of employee. For example, almost one third of businesses reported increases in their employment of production staff.

In terms of production activities, 61% reported increases in production levels, while only 2% reported decreased production levels. About 37% of technologically innovating businesses reported that materials consumption had increased, while only 10% reported a fall. About 33% had increased their capital utilisation, while only 2% reported a fall.

In terms of the profitability of the business, 38% reported that their profits had increased as a result of their innovative activities, and 7% reported a fall in their profits.

### Official organisations and administration

There are many organisations in Australia concerned in some way with the development of science and technology.

The Commonwealth Government's commitment to science and technology is reflected in the functions of the Department of Industry, Science and Resources. The Department is concerned with the development and maintenance of Australia's scientific and technological capability.

A number of other Commonwealth Government organisations either support or carry out scientific and technological activities. State Governments are also involved in science and technology through State government departments, science and technology councils and other organisations. Non-government organisations participating in scientific and technological activities include higher education institutions, professional and learned bodies, private organisations and industry groups.

## Department of Industry, Science and Resources

The Department, responsible for the majority of federally supported technology and industry development programs, includes the Science and Technology Division, the Australian Industrial Property Organisation and the Office of AusIndustry, including the Industry Research and Development Board (IRDB) programs. The Science and Technology Division, comprising the Science and Technology Policy Branch, the National Science and Technology Programs Branch, the International Science and Technology Branch and the Science and Technology Advisory Branch, is responsible for science and technology strategy, policy, analysis and awareness. It is responsible, inter alia, for the preparation of the annual Science and Technology Budget Statement.

The Department, through AusIndustry, administers the Tax Concession for Research and Development scheme and the Strategic Assistance for Research and Development (START) Program. The scientific and technological bodies of the portfolio include the Commonwealth Scientific and Industrial Research Organisation, the Australian Nuclear Science and Technology Organisation and the Australian Institute of Marine Science.

### R&D Tax Concession Program

The tax concession for R&D, which commenced from July 1985, is the focus of one of the major programs in the Government's package of measures to encourage R&D in Australia.

The concession allows companies incorporated in Australia, public trading trusts and partnerships of eligible companies, to deduct up to 125% of eligible expenditure on R&D activities when lodging their corporate tax returns.

Expenditure eligible under the scheme includes: salaries, wages and other overhead costs which are directly related to the company's Australian R&D activities; contract expenditure; and capital expenditure on R&D plant and equipment (over three years). Expenditure on acquiring, or acquiring the right to use, technology for the purposes of the company's own R&D activities is 100% deductible.

The R&D projects must also satisfy a requirement for adequate Australian content. In addition the results of the R&D must be exploited on normal commercial terms and to the benefit of Australia.

To attract the tax concession deduction, annual eligible R&D expenditure must exceed \$20,000. Where R&D is contracted to either an approved Registered Research Agency or a Cooperative Research Centre this expenditure threshold is waived.

### Strategic Assistance for Research and Development Program

The R&D START Program replaced the R&D Syndication Program. It encompasses and builds upon other R&D support measures to provide a flexible package of assistance to industry for research, development and commercialisation.

The Program complements the R&D Tax Concession Program.

R&D START meets the need for a program capable of funding larger projects, with more flexible funding arrangements, and aims to:

- provide a new competitive R&D scheme to replace the R&D Syndication Program;
- provide a mix of support measures based on large grants, loans and interest rate subsidies; and
- develop new market-based support measures in further consultation with industry.

There are three rounds of grants each year (every four months) to provide a timely response to companies in areas of rapidly developing technologies and markets.

The IRDB has flexibility to vary the combination of support to take account of variations in spillovers, closeness to market, nature of the technology and capacity to attract private finance. The basic elements are grants, loans (which will normally be at commercial rates but may have repayment deferred), and interest subsidies to lenders who participate in financing the projects.

## Commonwealth Scientific and Industrial Research Organisation (CSIRO)

The CSIRO was established as an independent statutory authority by the *Science and Industry Research Act 1949*, which has been amended on a number of occasions since then. Its primary role is as an applications-oriented research organisation in support of major industry sectors and selected areas of community interest, with a strong commitment to the effective transfer of its results to users.

Briefly, the CSIRO's primary statutory functions are to:

- carry out scientific research for the benefit of Australian industry, the community, national objectives, national or international responsibilities, or for any other purpose determined by the Minister; and
- encourage or facilitate the application or utilisation of the results of such research.

Other functions include dissemination and publication of scientific information, international liaison in scientific matters, and provision of services and facilities.

The CSIRO's work is planned and prioritised on a sectoral basis and conducted through core business units—CSIRO Divisions. External advice on research priorities is channelled through Sector Advisory Committees. Each sector represents an industry group, market, or natural resource of national significance. There are 22 sectors covering research in five broad groupings:

- *Agribusiness*—field crops; food processing; forestry, wood and paper industries; horticulture; meat, dairy and aquaculture; wool and textiles.
- *Environment and Natural Resources*—biodiversity; climate and atmosphere; land and water; marine.
- *Information Technology, Infrastructure and Services*—information technology and telecommunications; built environment; measurement standards; radio astronomy; services.
- *Manufacturing*—chemicals and plastics; integrated manufactured products; pharmaceuticals and human health.

- *Minerals and Energy*—coal and energy; mineral exploration and mining; mineral processing and metal production; petroleum.

The CSIRO has a staff of about 7,200 in more than 70 locations throughout Australia. About one third of the staff are professional scientists, with the others providing technical, administrative or other support. The CSIRO's budget for 1997–98 was \$711m, of which \$467m was provided directly by the Commonwealth Government.

## Australian Nuclear Science and Technology Organisation (ANSTO)

ANSTO is Australia's national nuclear organisation and the centre of Australian nuclear expertise. It is established under the *Australian Nuclear Science and Technology Organisation Act 1987* as amended. Its mission is to benefit the Australian community by the development and peaceful application of nuclear science and technology in industry, medicine, agriculture, science and other fields.

## Australian Institute of Marine Science (AIMS)

AIMS is one of Australia's key research agencies and the only one committed primarily to marine research, with emphasis on tropical marine science. The Institute is a federally funded statutory authority governed by a specialist Council appointed by the Australian Government. It was established in 1972 and has its headquarters at Cape Ferguson, Queensland, 50 km south of the coastal city of Townsville. More recently a laboratory has been established in Dampier, Western Australia.

The Institute's mission is to generate the knowledge to support the sustainable use and protection of the marine environment through innovative, world-class scientific and technological research. Since it was set up, AIMS has established itself in strategic basic marine science supporting both public and private interests, targeting problems that are not being addressed by any other agency. The Institute has built strong links to Australian industry and to the wider Asia-Pacific region; it has established a long-term environmental monitoring program and built skills and knowledge in resource assessment, especially in tropical mangrove and coral reef systems; and is a leader in setting environmental assessment standards.



The R&D program is focused on research relating to the tropical coast and the continental shelf, and the development and application of technology to problems in this zone. Much of it involves long-term research which is geared towards an improved understanding of marine systems and the development of a capability to predict the behaviour of complex tropical marine systems. Priority areas include improving our understanding of the impacts of natural and human-induced changes in the marine environment, assessment of living marine resources and marine biotechnology (e.g. pharmaceuticals). These efforts sit within the following strategic directions:

- *Understanding the marine environment*—physical behaviour of the oceans; nutrient pathways; global climate change; impacts of cyclones and river run-off.
- *Marine resources assessment*—taxonomy, distribution and abundance of key tropical faunas (especially coral reefs, mangroves and fish).
- *Ecologically sustainable development of marine resources*—predicting long-term changes in coral reefs; environmental impacts on coastal ecosystems.
- *Marine biodiversity*—evolution; genetic structure; discovery of bio-active compounds for drug development; linkages between populations (replenishment).
- *New marine research technologies*—underwater computing; micro-environment recording; laser technology; links between basic science and industrial applications (e.g. oil spill prediction).



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*Research and Experimental Development, All Sector Summary, Australia* (8112.0).

*Research and Experimental Development, Business Enterprises, Australia* (8104.0).

*Research and Experimental Development, General Government and Private Non-profit Organisations, Australia* (8109.0).

*Research and Experimental Development, Higher Education Organisations, Australia* (8111.0).

### Other publications

OECD, *Main Science and Technology Indicators, 1998—1*.

### Additional information

Additional information on topics presented in this chapter may be found in the annual reports of the organisations mentioned, particularly the then Department of Industry, Science and Tourism (now the Department of Industry, Science and Resources) and the CSIRO, and in the annual Science and Technology Statements. Further statistical information on higher education is obtainable from the Department of Education, Training and Youth Affairs.

The then Department of Industry, Science and Tourism's *Australian Business Innovation, 1996* uses science and technology indicators to give a good overview and analysis of science and technology information in Australia. It presents information on business innovation, an R&D related view of trade in manufacturing, diffusion of advanced manufacturing technologies, patents, business sector R&D and bibliometrics.

Additional information on some technology related issues, particularly on the use of information technology in the home, may be found in *Chapter 24, Communications*.



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## Introduction

The financial system in Australia can be thought of as having three overlapping components. The first component consists of financial enterprises (such as banks) and regulatory authorities, the Reserve Bank and the Australian Prudential Regulation Authority. The second consists of financial markets (for example, the bond market) and their participants (issuers such as governments and investors such as superannuation funds). The third is the payments system—that is, the cash, cheque and electronic means by which payments are effected—and its participants (for example, banks). The interaction of these components enables funds for investment or consumption to be made available from savings in other parts of the national or international economy.

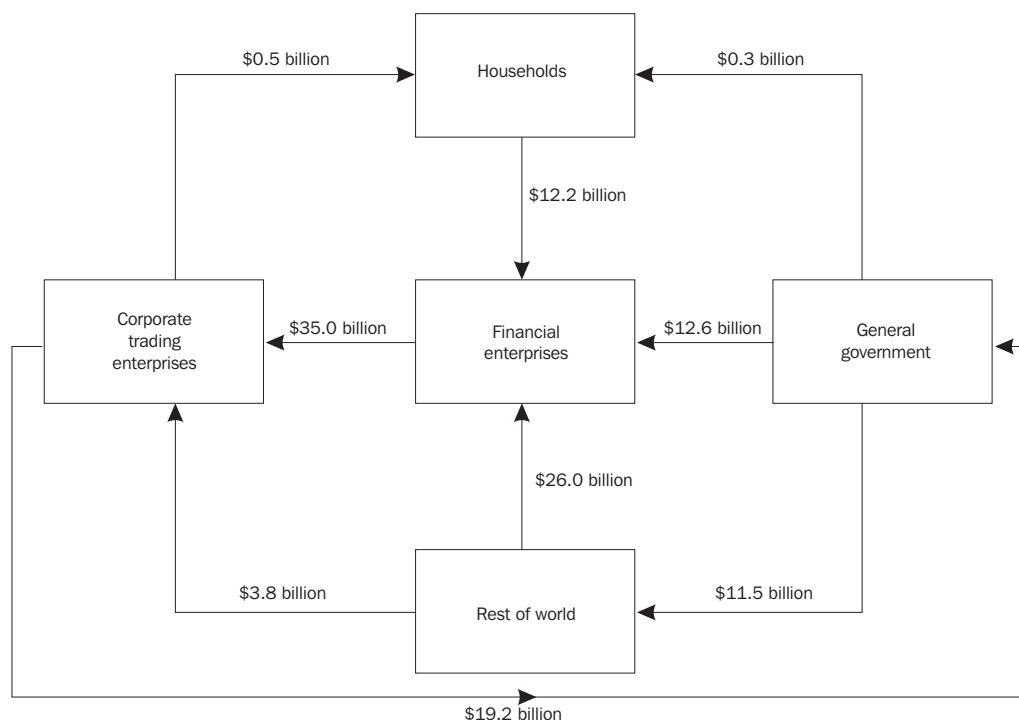
This chapter provides a summary of the structure and activities of the three financial system components as they function currently. However, the structure and activities will change as a result of regulatory or deregulatory processes.

From 1 July 1998, a new financial regulatory framework came into effect, in response to the recommendations of the Financial System Inquiry

(the Wallis Committee). Under the new structure a single prudential supervisor, the Australian Prudential Regulation Authority (APRA) has been established to take over responsibility for the supervision of banks, life and general insurance companies and superannuation funds. Supervision of building societies, credit unions and friendly societies is expected to transfer to APRA during 1998–99. The Australian Securities and Investments Commission (ASIC) assumes responsibility for market integrity and consumer protection across the financial system. The Reserve Bank retains responsibility for monetary policy and the maintenance of financial stability, including stability of the payments system. The new regulatory structure envisages close and effective coordination between the Reserve Bank and APRA.

Diagram 26.1 provides an overview of the flows of capital through the financial system. It illustrates the net financial flows between sectors during the year 1997–98. The arrows show the net flows from lenders to borrowers. For example, there is a \$12.2b net flow from the household sector to financial enterprises. There is also a \$35.0b net flow from financial enterprises to corporate trading enterprises. This is mainly attributable to increased loans by financial intermediaries and increased share purchases by financial institutions such as life offices.

## 26.1 INTER-SECTORAL FINANCIAL FLOWS DURING THE YEAR 1997-98



Note: The arrows show the direction of net financial flows from lending sectors to borrowing sectors. The number relating to each arrow indicates the value of that net flow during the period. Other claims are omitted from the diagram. For this reason, inter-sectoral borrowing does not equal inter-sectoral lending.

Source: Australian National Accounts: Financial Accounts (5232.0).

## Financial enterprises

Financial enterprises are institutions which engage in acquiring financial assets and incurring liabilities, for example, by taking deposits, borrowing and lending, providing superannuation, supplying all types of insurance cover, leasing, and investing in financial assets.

For national accounting purposes, financial enterprises are grouped into three subsectors: Deposit-taking institutions; Life offices and superannuation funds; and Other financial institutions. Deposit-taking institutions are those which are included in the Reserve Bank of Australia's *broad money* measure (see *Money supply measures* later in the chapter), and include the Reserve Bank itself, banks, building societies, credit unions, merchant banks, pastoral finance companies, finance companies, general financiers and cash management trusts. Life offices and superannuation funds cover the statutory funds of life offices, separately constituted superannuation

funds, approved deposit funds, friendly societies and long service leave boards. Other financial institutions cover health, export and general insurance companies, common funds, mortgage, fixed interest and equity unit trusts, issuers of asset-backed securities, economic development corporations, cooperative housing societies and credit union leagues.

Table 26.2 shows the relative size of these groups of financial enterprises in terms of their financial assets. This table has been compiled on a consolidated basis, that is, financial claims between institutions in the same grouping have been eliminated. The total is also consolidated, that is, financial claims between the groupings have been eliminated. For this reason, and because there are a number of less significant adjustments made for national accounting purposes, the statistics in this summary consolidated table will differ from those tables presented separately in this chapter and published elsewhere for the different types of financial enterprises.

## 26.2 ASSETS OF FINANCIAL INSTITUTIONS

At 30 June	Deposit taking institutions			Life offices and superannuation funds	Other financial institutions	Consolidated total
	Reserve Bank	Banks	Other			
	\$b	\$b	\$b	\$b	\$b	\$b
1989	24.2	238.8	136.0	150.0	79.3	553.1
1990	25.3	271.3	143.6	169.9	87.5	610.8
1991	29.4	300.5	135.8	182.4	96.6	646.1
1992	32.1	308.7	128.1	212.0	93.6	677.4
1993	37.4	333.1	117.7	228.0	94.7	709.9
1994	34.4	365.8	118.8	241.8	102.8	748.4
1995	37.6	386.0	159.8	260.9	111.2	830.8
1996	36.6	428.4	144.2	293.4	128.0	885.8
1997	50.4	513.1	154.2	349.5	156.1	1 032.6
1998	47.3	570.8	172.3	409.1	206.7	1 187.3

Source: Australian National Accounts: Financial Accounts (5232.0).

## Deposit-taking institutions

### Banks

Under the new financial regulatory framework which came into effect from 1 July 1998, APRA has taken over responsibility for the supervision of banks.

Before 1959, central banking business was the responsibility of the Commonwealth Bank. The *Reserve Bank Act 1959* established the Reserve Bank of Australia as the central bank. From 1 July 1998, the Reserve Bank retains responsibility for monetary policy and the maintenance of financial stability, including stability of the payments system.

Banks are the largest deposit-taking institutions in Australia. At the end of June 1998, there were 55 banks operating in Australia. All are authorised to operate by the *Banking Act 1959*. Four major banks: the Australia and New Zealand

Banking Group, National Australia Bank, Westpac Banking Corporation and the Commonwealth Bank of Australia, account for over half the total assets of all banks. These four banks provide widespread banking services and an extensive retail branch network throughout Australia. The remaining banks provide similar banking services through limited branch networks often located in particular regions. As at 30 June 1998, banks operated 5,615 branches and 6,367 agencies. Of the total branches, 3,190 were located in metropolitan areas. Banking facilities were also available at 3,232 metropolitan agencies throughout Australia. Banking services were also provided at 2,720 *giroPost* locations and 8,814 Automatic Teller Machines.

The liabilities and financial assets of the Reserve Bank are set out in table 26.3. The liabilities and financial assets of the banks operating in Australia are shown in table 26.4.

**26.3 FINANCIAL ASSETS AND LIABILITIES, Reserve Bank of Australia**

	Amounts outstanding at 30 June		
	1996	1997	1998
	\$m	\$m	\$m
<b>FINANCIAL ASSETS</b>			
Cash and deposits	1 452	1 670	369
Loans and placements	99	80	95
Commonwealth Government Treasury Notes	3 623	5 219	4 074
Long-term debt securities	11 943	20 188	16 937
Other financial claims	78	153	125
International reserves	19 059	22 790	25 447
<b>Total financial assets(a)</b>	<b>36 254</b>	<b>50 100</b>	<b>47 047</b>
<b>LIABILITIES</b>			
Notes on issue	19 182	20 064	21 651
Deposits	6 427	18 783	10 885
Equity(b)	9 382	9 735	12 554
Other financial claims	50	1 767	1 954
<b>Total liabilities</b>	<b>35 041</b>	<b>50 348</b>	<b>47 044</b>

(a) Excludes non-financial assets (e.g. fixed assets, property, inventories, etc.). (b) Estimates based on net asset values.

Source: Australian National Accounts: Financial Accounts (5232.0).

**26.4 FINANCIAL ASSETS AND LIABILITIES, Banks(a)**

	Amounts outstanding at 30 June		
	1996	1997	1998
	\$m	\$m	\$m
<b>FINANCIAL ASSETS</b>			
Cash and deposits	21 411	28 081	27 259
Loans and placements	300 697	331 371	373 958
Bills of exchange	12 360	13 211	14 149
Promissory notes	3 303	1 384	1 884
Commonwealth Government Treasury Notes	8 426	6 029	4 559
Long-term debt securities	20 891	24 315	19 719
Equities	9 391	13 513	11 264
Other financial claims	10 854	17 416	17 606
Foreign claims	26 047	32 883	40 598
<b>Total financial assets(b)</b>	<b>413 380</b>	<b>468 203</b>	<b>510 996</b>
<b>LIABILITIES</b>			
Deposits	256 623	285 967	313 121
Loans and placements	10 306	12 831	15 273
Bills of exchange	84	42	127
Bank certificates of deposit	47 390	54 789	65 580
Long-term debt securities	37 169	48 619	59 255
Equity	57 361	85 364	99 270
Other financial claims	14 673	25 495	18 136
<b>Total liabilities</b>	<b>423 606</b>	<b>513 107</b>	<b>570 762</b>

(a) Does not include the Reserve Bank of Australia. (b) Excludes non-financial assets (e.g. fixed assets, property, inventories, etc.).

Source: Australian National Accounts: Financial Accounts (5232.0).



**26.5 NON-BANK DEPOSIT-TAKING INSTITUTIONS, Total Assets**

	Amounts outstanding at 30 June		
	1996	1997	1998
	\$m	\$m	\$m
Permanent building societies	13 106	10 575	11 359
Credit cooperatives	15 561	16 949	17 847
Authorised money market dealers	4 084	n.a.	n.a.
Money market corporations	59 852	67 069	66 980
Pastoral finance companies	2 880	3 290	3 551
Finance companies	34 767	36 169	43 729
General financiers	11 445	14 067	16 408
Cash management trusts	7 462	11 208	17 340
<b>Total</b>	<b>149 157</b>	<b>159 327</b>	<b>177 214</b>

Source: Australian Financial Institutions Commission; Reserve Bank of Australia; Managed Funds, Australia (5655.0).

### Non-bank deposit-taking institutions

In addition to banks, financial institutions such as building societies, credit unions and merchant banks play an important part in the Australian financial system. In the Australian Financial Accounts, non-bank deposit-taking institutions are defined as those with liabilities included in the Reserve Bank's definition of *broad money*. Financial enterprises classified to this sub-sector are cash management trusts and corporations registered in categories A to G of the *Financial Corporations Act 1974*.

Regulation of some of these institutions is provided for by both Commonwealth and State legislation. Part of the regulatory framework is provided by the *Financial Corporations Act 1974*, under which non-bank financial institutions with assets in excess of \$1m are registered. Under the Act, information and statistics on their operations are provided to the Reserve Bank.

In each State and Territory, there is also legislation designed to regulate the activities and monitor the solvency position of particular types of financial institutions which operate as financial cooperatives. In July 1992, the Australian Financial Institutions Commission was established to promote Australia-wide standards for the prudential supervision of building societies and credit unions. However responsibility for the implementation of these standards rests with the individual State supervisory authorities. Under the new financial regulatory framework which came into effect

from 1 July 1998, the supervision of building societies, credit unions and friendly societies is expected to transfer to APRA late in 1998–99.

Table 26.5 shows the total assets of each category of non-bank deposit-taking institution.

At 30 June 1998, there were seven categories of non-bank deposit-taking institution. Permanent building societies are usually organised as financial cooperatives operating under State or Territory legislation. They are authorised to accept money on deposit. They provide finance principally in the form of housing loans to their members. They are registered with the Reserve Bank under the *Financial Corporations Act 1974* as category A financial corporations.

Credit cooperatives—also known as credit unions—are similar to building societies. As their name implies, they are organised as financial cooperatives which borrow from and provide finance to their members. Credit cooperatives mainly lend for purposes other than housing. They are registered under the *Financial Corporations Act 1974* as category B financial corporations.

Authorised dealers (category C financial corporations) were authorised by the Reserve Bank to buy and sell debt securities in the Official Short-term Money Market. The Bank supported them by offering them an end-of-day repurchase facility. In return, the authorised dealers had to be willing traders in approved securities and adhere to other requirements of the Reserve Bank. These arrangements came to an end in August 1996 when the Reserve Bank withdrew all facilities from authorised dealers.

Money market corporations are similar to wholesale banks and for this reason they are often referred to as merchant or investment banks. They have substantial short-term borrowings which they use to fund business loans and investments in debt securities. They are registered as category D financial corporations.

Pastoral finance companies incur liabilities to lend to rural producers. They are category E financial corporations. Finance companies (category F financial corporations) borrow mainly on financial markets, for example by issuing debentures. They lend these funds to both businesses and persons. Their lending to businesses is sometimes called commercial lending and covers, for example, financial leasing of vehicle fleets. Their lending to persons is often in the form of instalment credit to finance retail sales by others. In contrast with finance companies, general financiers (category G financial corporations) are funded by their parent or another member of their company group. Typically they lend to corporate customers buying products produced by member companies of their group. For example, a general financier within a motor vehicle manufacturing group will lend to the group's dealers to finance their inventory of vehicles.

Cash management trusts are investment funds open to the public. They invest the pooled monies of their unit holders mainly in money-market securities such as bills of exchange. As with other public unit trusts their operations are governed by a trust deed and their units are redeemable by the trustee on demand or within a short time. They are not registered with the Reserve Bank.

## Life offices and superannuation funds

Life insurance offices and superannuation funds are shown as a separate sub-sector in the Australian Financial Accounts because of the importance of these institutions as repositories of long-term household savings. This sub-sector comprises:

- life insurance offices (both their ordinary business and their superannuation business such as deferred annuities);
- superannuation funds;
- friendly societies; and
- long service leave boards.

Table 26.6 contains consolidated data showing the total stock of financial assets and liabilities of the life office and superannuation fund sub-sector. The supplementary tables, 26.7 and 26.8, show separately the financial assets of life offices and superannuation funds. The assets of superannuation funds which have been invested with life offices are included in the life office table (26.7) and not in the superannuation funds table (26.8). At 30 June 1998, the assets of superannuation funds invested with life offices totalled \$124b, 79% of total life office assets. Data in the supplementary tables do not add to the totals in table 26.6. There are three main reasons. First, the supplementary tables cover only a subset of institutions in this sub-sector. Second, in table 26.6 balances outstanding between different types of institution are consolidated. Third, data from counterparties are used extensively in the summary table, where data are not available from the institutions covered.

**26.6 FINANCIAL ASSETS AND LIABILITIES, Life Offices and Superannuation Funds**

	Amounts outstanding at 30 June		
	1996	1997	1998
	\$m	\$m	\$m
<b>FINANCIAL ASSETS</b>			
Cash and deposits	21 179	25 160	35 124
Loans and placements	14 555	15 199	18 412
Bills of exchange	12 332	11 184	11 703
Promissory notes	8 272	13 036	13 239
Commonwealth Government Treasury Notes	93	102	392
Bank certificates of deposit	10 702	11 940	10 551
Long-term debt securities	52 349	54 314	60 992
Equities	103 967	137 345	146 124
Other financial claims	5 969	3 871	7 577
Foreign claims	40 617	53 125	68 443
<b>Total financial assets(a)</b>	<b>270 035</b>	<b>325 276</b>	<b>372 557</b>
<b>LIABILITIES</b>			
Loans and placements	313	286	600
Technical reserves of life offices and pension funds	281 897	336 801	371 440
Equity	3 438	6 305	30 200
Other financial claims	7 246	6 060	6 822
<b>Total liabilities</b>	<b>292 894</b>	<b>349 453</b>	<b>409 063</b>

(a) Excludes non-financial assets (e.g. fixed assets, property, inventories, etc.).

Source: Australian National Accounts: Financial Accounts (5232.0).

**Life insurance companies**

Life insurance companies offer termination insurance and investment policies. Termination insurance includes the payment of a sum of money on the death of the insured or on the insured receiving a permanent disability. Investment products include annuities and superannuation plans. At 1 August 1998, the life insurance industry in Australia consisted of 42 direct insurers and six reinsurers. As with the banking industry, the life insurance industry is dominated by a few very large companies holding a majority of the industry's assets.

Under the new financial regulatory framework which came into effect from 1 July 1998, APRA has taken over responsibility for the supervision of life insurance companies. Previously, these

were supervised by the Insurance and Superannuation Commission under the *Life Insurance Act 1995*.

A major development in recent years in the life insurance industry has been the trend towards 'demutualisation'. Until recently, several of the largest life insurance companies were registered as mutual societies, which meant that these insurance companies were owned by their policy holders. The demutualisation process involved the issuing of shares to the policy holders and the incorporation of the life insurance companies.

Table 26.7 shows the total assets held by Australian life insurance companies for the most recent three years.

**26.7 AUSTRALIAN LIFE INSURERS, Total Assets**

	June 1996	June 1997	June 1998
	\$m	\$m	\$m
Cash and deposits	4 913	5 987	11 072
Loans and placements	5 809	6 464	8 247
Short-term securities	9 929	14 427	14 162
Long-term securities	28 708	29 287	33 432
Equities and units and trusts	38 073	41 965	52 283
Land and buildings	9 487	8 855	7 527
Assets overseas	17 217	15 599	26 587
Other	4 385	4 716	4 684
<b>Total</b>	<b>118 521</b>	<b>127 300</b>	<b>157 994</b>

Source: *Managed Funds, Australia* (5655.0).

**Superannuation funds**

Superannuation funds have been established to provide retirement benefits for their members. Members make contributions during their employment and receive the benefits of this form of saving in retirement. In order to receive concessional taxation treatment, a superannuation fund must elect to be regulated under the *Superannuation Industry (Supervision) Act 1993*. As at March 1998, there were approximately 176,000 superannuation funds regulated under the Act.

Under the new financial regulatory framework which came into effect from 1 July 1998, APRA has taken over responsibility for the supervision of superannuation funds. It is expected that APRA will transfer responsibility for regulation of many small superannuation funds to the Australian Taxation Office in accordance with a recommendation of the Financial System Inquiry.

The small 'do-it-yourself' superannuation funds (those with less than five members), constitute the vast majority of superannuation funds—approximately 172,000 in number at March 1998. Of the larger superannuation funds, most are either open to the general public or sponsored by an employer. Superannuation funds are employer-sponsored if an employer contributes to the fund on behalf of an employee. Employer-sponsored funds generally have closed memberships restricted to the employees of particular companies. Industry funds, such as those operated by trade unions, are also considered to be employer-sponsored funds.

The introduction of Retirement Savings Accounts in 1997 also allows superannuation contributions to be deposited in capital guaranteed superannuation savings accounts operated by financial institutions without trustees. At 30 June 1998, deposits in such accounts amounted to \$551m. The assets of superannuation funds are shown in table 26.8.

**26.8 SUPERANNUATION FUNDS, Total Assets**

	June 1996	June 1997	June 1998
	\$m	\$m	\$m
Cash and deposits	12 316	16 740	22 193
Loans and placements	6 189	7 827	8 887
Bills of exchange	4 332	4 985	5 162
Other short-term securities	6 361	7 045	7 325
Government securities	19 601	20 104	22 354
Other long-term securities	2 433	2 784	3 713
Shares	46 475	60 232	65 791
Units in trusts	21 406	27 837	34 125
Other financial assets	4 381	4 267	3 764
Other assets	38 172	47 520	56 643
<b>Total</b>	<b>161 666</b>	<b>199 341</b>	<b>229 957</b>

Source: *Joint survey by the ABS and the (then) Insurance and Superannuation Commission*.

## Other financial institutions

Other financial institutions can be grouped into eight broad categories:

- economic development corporations owned by governments;
- general insurance, health insurance, and export insurance companies, including those owned by governments;
- cash, mortgage, equity and fixed interest common funds;
- mortgage, fixed interest and equity public unit trusts;
- securitisers;
- investment companies;
- cooperative housing societies; and
- corporations (mainly credit union leagues) registered in category J of the *Financial Corporations Act 1974*.

Table 26.9 shows the stock of total assets of selected groups of other financial institutions.

Economic development corporations are owned by governments. As their name implies, these bodies are expected to finance infrastructure developments mainly in their home State or Territory.

General insurers offer insurance other than life and health insurance; for example, house, car and marine insurance. Private sector general insurers are subject to the *Insurance Act 1973*. Under the new financial regulatory framework

which came into effect from 1 July 1998, APRA has taken over responsibility for the supervision of general insurance companies.

Health insurers are organisations which offer insurance to the general public or a restricted group to cover medical and hospital expenses. They are supervised by the Private Health Insurance Administration Council under the *National Health Act 1953*. There is only one government-owned export insurer in Australia.

Common funds are set up by trustee companies and are governed by State Trustee Acts. They allow the trustee companies to combine depositors' funds and other funds held in trust in an investment pool. They are categorised according to the main types of assets in the pool, for example, cash funds or equity funds.

Public unit trusts are investment funds open to the Australian public. Their operations are governed by a trust deed which is administered by a management company. Under the *Managed Investments Act 1997*, the management company has become the single responsible entity for both investment strategy and custodial arrangements, the latter previously having the responsibility of a trustee. These trusts allow their unitholders to dispose of their units quickly. They may sell them back to the manager if the trust is unlisted, or sell them on the Australian Stock Exchange if the trust is listed. Public unit trusts are categorised according to the main types of assets in the pool; for example, property or equity. Only those which invest primarily in financial assets—mortgages, fixed interest securities or equity securities—are included here.

**26.9 OTHER FINANCIAL INSTITUTIONS, Total Assets**

	Amounts outstanding at 30 June		
	1996	1997	1998
	\$m	\$m	\$m
Private health insurance funds	2 381	2 482	n.y.a.
General insurers	48 106	57 358	61 905
Common funds	5 008	6 118	6 890
Public unit trusts(a)	29 197	42 648	52 928
Securitisers	14 538	20 001	31 675
Cooperative housing societies	1 603	1 359	n.y.a.
Other(b)	23 091	18 928	42 913
<b>Total</b>	<b>123 924</b>	<b>148 894</b>	<b>n.y.a.</b>

(a) Excludes property and trading trusts. (b) Includes investment companies, category J financial institutions, economic development corporations.

Source: Australian National Accounts: Financial Accounts (5232.0); *Managed Funds, Australia* (5655.0); Private Health Insurance Administration Council Annual Report; Australian Prudential Regulation Authority, *Annual Statistics on Financial Institutions*.

Investment companies are similar to equity trusts in that they invest in the shares of other companies. However, investors in investment companies hold share assets, not unit assets.

Securitisers issue debt securities which are backed by specific assets. The most common assets bought by securitisation trusts are residential mortgages. These mortgages are originated by financial institutions such as banks and building societies or specialist mortgage managers. Other assets can also be used to back these securities, such as credit card receivables and leases. Securitisers generally pool the assets and use the income on them to pay interest to the holders of the asset-backed securities.

Cooperative housing societies are similar to permanent building societies. In the past, they were wound up after a set period, but now they too are continuing bodies. They raise money through loans from members (rather than deposits) and provide finance to members in the form of housing loans. Over recent years, many cooperative housing societies have originated mortgages on behalf of securitisers.

The last of these financial institutions are companies (mainly credit union leagues) registered in category J of the *Financial Corporations Act 1974*. They are classified to Other financial institutions because their liabilities are not included in the Reserve Bank's definition of *broad money*. Credit union leagues are companies performing treasury operations (funding activities, asset management) for their credit union members.

## Financial markets

Financial markets are used by participants to either raise funds (for example, by issuing securities) or invest savings (by buying securities and other financial assets). The major markets in the Australian financial system include the share market, bond market and money market. Descriptions and tables indicating prices and activity in various financial markets are provided below.

A significant influence in financial markets is the participation of institutional investors which control large pools of investment funds. These pools are accumulated by collective investment institutions and are often managed on a fee-for-service basis by investment managers. A summary of the activities of these institutions is also provided.

## Credit market

Credit may be defined broadly as funds provided to those seeking to borrow. However, analytically useful measures of credit usually exclude borrowings by financial enterprises because their main role is as intermediaries (i.e. they borrow in order to lend). Also, lending and borrowing between enterprises which have a special relationship, such as between companies in the same group or between government agencies, are often excluded from credit measures because transactions between these bodies frequently are of a non-market nature. Similarly, some types of financial instrument, such as trade debts, are not considered to be part of an organised market. All of these types of transactions are omitted from table 26.10, which presents a summary of the demand for credit in Australia by the non-financial sectors. It includes raisings by the issue of both debt and equity securities.

**26.10 DEMAND FOR CREDIT—Funds Raised on Credit Markets**

	Net transactions during year		
	1995–96	1996–97	1997–98
	\$m	\$m	\$m
Funds (including equity) raised on conventional credit markets by			
Commonwealth public trading enterprises	81	2 679	11 308
State and local government public trading enterprises	–1 875	–189	71
Private trading enterprises	52 577	41 881	46 277
Commonwealth general government	6 690	2 785	–18 358
State and local general government	–11 971	–7 053	265
Households and unincorporated businesses	31 029	27 780	38 787
<b>Total</b>	<b>76 531</b>	<b>67 883</b>	<b>78 350</b>

Note: Positive numbers indicate an increase in borrowings. Negative numbers indicate debt repayment.

Source: Australian National Accounts: Financial Accounts (5232.0).

**26.11 BANK RETAIL DEPOSIT AND LENDING RATES**

	June 1996	June 1997	June 1998
	% p.a.	% p.a.	% p.a.
Bank deposit rates			
Six month fixed deposit	6.55	4.70	4.20
Cash management accounts(a)	5.70	3.70	3.30
Bank lending rates			
Housing loans—variable	9.75	7.20	6.70
Small business loans—variable	11.25	9.50	7.70
Credit cards	16.70	16.00	15.30

(a) Accounts from \$20,000 to less than \$100,000.

Source: Reserve Bank of Australia Bulletin.

Table 26.11 shows indicative interest rates for bank borrowing and lending. Another view of activity in the credit market is provided later in this chapter under *Lending by financial institutions*.

**Stock market**

The Australian stock market provides a mechanism for trading equities (shares), units in trusts, options, and some fixed interest securities. It is operated nationally by Australian Stock Exchange Limited (ASX), which is responsible for the day-to-day running and surveillance of stock market trading. In the past, trading on the stock market was undertaken by open outcry. Now trading is electronic, conducted using the Stock Exchange Automated Trading System. The stock market now effectively consists of a network of computers with buyers and sellers located anywhere in the country.

ASX classifies listed companies according to their major activity and produces indexes based on these classifications. Table 26.12 summarises the performance of the major indexes over the last three financial years.

**26.12 AUSTRALIAN STOCK MARKET INDEXES(a)**

	1995–96	1996–97	1997–98
All ordinaries			
Index(b)	2 231.7	2 662.7	2 668.4
High	2 326.0	2 725.9	2 881.4
Low	2 003.3	2 096.1	2 299.2
All industrials			
Index(b)	3 305.8	4 173.0	4 689.0
High	3 465.4	4 301.8	4 964.5
Low	3 006.8	3 177.5	3 835.8
All resources			
Index(b)	1 423.3	1 500.4	1 037.4
High	1 524.7	1 530.3	1 523.1
Low	1 244.7	1 275.6	994.1

(a) Base 31 December 1979 = 500. (b) Index value at close of trade on 30 June.

Source: Australian Stock Exchange, *Monthly Index Analysis*.

Table 26.13 shows the market value of Australian shares and units in trusts on issue—both listed and unlisted. It shows the amount on issue by sector of issuer and sector of holder of equities and units. Definitions of the sectors shown in this table can be found in *Australian National Accounts: Financial Accounts* (5232.0).



## 26.13 THE EQUITY MARKET(a)

	Amounts on issue at 30 June		
	1996	1997	1998
	\$m	\$m	\$m
<b>Total equities and units in trusts</b>	<b>635 897</b>	<b>746 568</b>	<b>894 411</b>
Issued by			
Commonwealth public trading enterprises(b)	24 989	26 818	80 318
State and local government public trading enterprises(b)	105 776	101 441	101 778
Private corporate trading enterprises(c)	372 448	428 104	447 861
Reserve Bank of Australia(b)	9 382	9 735	12 554
Banks(c)	61 050	93 528	108 294
Non-bank deposit taking institutions(c)	15 940	15 903	15 596
Life offices and superannuation funds(c)	3 438	6 962	32 862
Other financial institutions(c)	42 640	63 891	95 118
State and local general government(b)	234	186	30
Held by			
Commonwealth public trading enterprises	225	268	315
State and local public trading enterprises	38	48	56
Private corporate trading enterprises	38 516	50 170	41 027
Banks	13 080	22 143	20 288
Non-bank deposit taking institutions	3 209	3 976	4 142
Life offices and superannuation funds	103 493	127 987	148 786
Other financial institutions	35 726	46 319	86 575
Commonwealth government	39 882	35 780	75 365
State and local general government	108 940	105 904	104 767
Households	104 686	130 508	172 641
Non-residents	190 550	217 335	240 449

(a) Includes units in trusts. (b) Net asset values. (c) These estimated market values are considered to be of poor quality. They should be used cautiously.

Source: Australian National Accounts: Financial Accounts (5232.0).

## Money market

Rates in the market at end June of the last three financial years are shown in table 26.14.

Money market securities have an original term to maturity of less than one year, often 90 or 180 days. They are issued by borrowers at a discount to face value and carry no income payment other than the repayment of face value at maturity. To enhance liquidity, money market securities conform to standardised attributes concerning risk and discount rates. Because of the standardisation, the securities of different issuers are often combined in the one parcel of securities for trading purposes. There are two types of securities: bills of exchange and promissory notes (or 'one-name paper'), both of which are covered by the *Bills of Exchange Act 1909*. The risk of a bill of exchange is reduced by an acceptor or endorser adding their name to the security for a fee. Most bills of exchange

traded in the market are bank-accepted bills. Promissory notes are issued by institutions whose credit worthiness is equal to or better than banks: the Commonwealth Government issues Treasury Notes, State Governments and large corporations issue commercial paper and banks issue negotiable certificates of deposit. Table 26.15 shows the amount on issue by sector of issuer and sector of holder of the various types of money market securities.

## 26.14 SHORT-TERM MONEY MARKET RATES

	June 1996	June 1997	June 1998
	% p.a.	% p.a.	% p.a.
11 am call	7.51	5.57	5.07
Bank-accepted bills—90 days	7.57	5.35	5.32

Source: Reserve Bank of Australia Bulletin.



**26.15 SHORT-TERM DEBT SECURITIES**

	Amounts outstanding at 30 June		
	1996	1997	1998
	\$m	\$m	\$m
<b>ISSUED BY</b>			
Commonwealth public trading enterprises	3 398	3 277	3 977
State and local public trading enterprises	99	97	380
Private trading enterprises	66 435	66 493	69 103
Banks	50 994	58 126	69 038
Non-bank deposit taking institutions	23 979	28 637	32 294
Other financial institutions	10 793	8 984	12 483
Commonwealth general government	15 430	13 303	10 305
State and local general government	9 309	4 376	6 265
Households and unincorporated businesses	2 932	2 311	2 466
<b>Total</b>	<b>183 369</b>	<b>185 605</b>	<b>206 312</b>
<b>HELD BY</b>			
Commonwealth public trading enterprises	1 284	1 404	678
State and local public trading enterprises	499	549	422
Private trading enterprises	9 270	10 109	12 779
Reserve Bank	3 623	5 219	4 074
Banks	27 609	23 919	23 923
Non-bank deposit taking institutions	12 119	14 811	21 034
Life offices and superannuation funds	31 399	36 262	35 885
Other financial institutions	28 416	33 820	35 269
State and local general government	7 800	7 495	12 320
Households and unincorporated businesses	4 760	4 228	6 305
Rest of world	56 590	47 789	53 623
<b>Total</b>	<b>183 369</b>	<b>185 605</b>	<b>206 312</b>

Source: Australian National Accounts: Financial Accounts (5232.0).

**Long-term debt securities market**

Long-term debt securities (bonds) are issued with original terms to maturity of one or more years. Usually the investors are paid a set periodic interest, called a coupon, for the life of the security and receive their initial investment back at maturity. Some securities have variable interest rates, some have principal repayments indexed, and there is a small amount of zero-coupon or deep discount securities which are issued at a discount to face value.

Governments, trading enterprises and financial institutions issue debt securities to finance long-term requirements. For these entities, the debt securities market generally provides a cheaper source of funds than borrowing from banks and other financial institutions.

Table 26.16 shows the interest rates on the last business day in June of the last three financial years for a range of long-term debt securities.

The main issuers of long-term debt securities are the Commonwealth Government and State Governments through their central borrowing authorities. Issues by Commonwealth, State and local public trading enterprises may be guaranteed by their respective governments. This provides the bond issue with a higher credit rating, meaning that the market will purchase the bonds at a lower yield. Corporate bonds are issued only by very large private trading and financial enterprises. The amounts outstanding on long-term debt securities at end June for the last three financial years are shown in table 26.17.

**26.16 LONG-TERM DEBT SECURITIES, Interest Rates**

	June 1996(a)	June 1997(a)	June 1998(a)
	% p.a.	% p.a.	% p.a.
Treasury bonds			
3 years	8.33	5.93	5.25
5 years	8.59	6.44	5.38
10 years	8.88	7.05	5.58
NSW T-corp bonds			
3 years	8.45	5.94	5.40
5 years	8.74	6.51	5.58
10 years	9.16	7.23	5.86
Finance company debentures			
2 years	7.60	5.50	5.30
3 years	7.80	5.90	5.40

(a) As at last business day in June.

Source: Reserve Bank of Australia Bulletin.

**26.17 LONG-TERM DEBT SECURITIES**

	Amounts outstanding at 30 June		
	1996	1997	1998
	\$m	\$m	\$m
<b>ISSUED BY</b>			
Commonwealth public trading enterprises	6 035	5 604	6 861
State and local public trading enterprises	248	177	92
Private trading enterprises	16 572	20 791	25 155
Banks	37 169	48 619	59 255
Non-bank deposit taking institutions	24 587	28 468	31 151
Other financial institutions	17 468	27 457	34 211
Commonwealth general government	98 773	108 026	96 104
State and local general government	80 323	82 388	82 540
<b>Total</b>	<b>281 175</b>	<b>321 530</b>	<b>335 369</b>
<b>HELD BY</b>			
Commonwealth public trading enterprises	31	96	97
State and local public trading enterprises	452	752	728
Private trading enterprises	202	233	322
Reserve Bank of Australia	11 943	20 188	16 937
Banks	20 891	24 315	19 719
Non-bank deposit taking institutions	13 818	10 475	11 414
Life offices and superannuation funds	52 349	54 314	60 992
Other financial institutions	21 667	21 925	28 975
State and local general government	8 784	7 047	7 429
Households and unincorporated businesses	20 711	20 153	14 686
Rest of world	130 327	162 032	174 070
<b>Total</b>	<b>281 175</b>	<b>321 530</b>	<b>335 369</b>

Source: Australian National Accounts: Financial Accounts (5232.0).

## Foreign exchange market

The foreign exchange market is the means whereby currencies of different countries can be bought and sold. In October 1983, the Commonwealth Government decided to float the Australian dollar, allowing its value to be determined by market forces with few exchange controls and little Reserve Bank intervention. Prior to 1983, the Australian dollar was pegged to a basket of currencies which were weighted according to their trading significance to Australia. For further information regarding exchange rates, see the *International accounts and trade*, particularly table 30.4. Table 26.18 shows the value of the Australian dollar against four major currencies at 30 June of the last three financial years.

**26.18 VALUE OF AUSTRALIAN DOLLAR, Against Major Currencies—At 30 June**

	1996	1997	1998
United States dollar	0.7855	0.7426	0.6064
United Kingdom pound	0.5064	0.4458	0.3634
German deutschmark	1.1914	1.2912	1.0967
Japanese yen	85.53	84.96	85.78

Note: Rate given is the midpoint between the buying and selling rates.

Source: *Average of Daily Exchange Rates* (5654.0).

Currencies are traded for many reasons: because of exporting or importing requirements, investing or borrowing overseas, arbitraging (i.e. taking advantage of short-term discrepancies in rates) or speculating on possible exchange rate movements with a view to making a profit. Table 26.19 shows daily averages of foreign exchange turnover against all currencies.

**26.19 FOREIGN EXCHANGE TURNOVER AGAINST ALL CURRENCIES, Daily Averages(a)**

	1995–96	1996–97	1997–98
	\$m	\$m	\$m
Transactions by foreign exchange dealers(b)			
Outright spot(c)	20 693	23 641	28 560
Outright forward(d)	2 014	2 495	3 640
Swaps	28 437	35 390	36 354
Options	968	1 442	2 115
<b>Total</b>	<b>52 112</b>	<b>62 968</b>	<b>70 668</b>

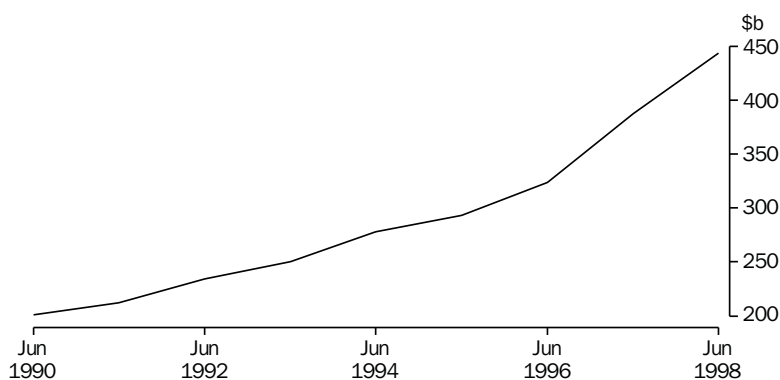
(a) Figures given are the average daily turnover for the financial year. (b) Australian banks and non-bank financial intermediaries authorised to deal in foreign exchange. (c) An outright spot transaction is one for receipt or delivery within two business days. (d) An outright forward transaction is one for receipt or delivery in more than two business days.

Source: *Reserve Bank of Australia Bulletin*, based on information supplied by foreign exchange dealers.

## Managed funds

The term 'managed funds' is used loosely in the financial community to embrace two broad types of institutions. The first are collective investment institutions (such as life insurance companies) which buy assets on their own account. The second are investment or fund managers which act as investment agents for the collective investment institutions as well as others with substantial funds to invest. Investment managers have relatively small balance sheets because most of the assets they acquire are purchased on behalf of clients. The significant growth in managed funds (see graph 26.20) has been a major development in the financial sector over the last decade.

## 26.20 MANAGED FUNDS, CONSOLIDATED ASSETS



Source: *Managed Funds, Australia* (5655.0).

### Collective investment institutions

As the name implies, collective investment institutions pool the funds of many small investors and use them to buy a particular type or mix of assets. The asset profile can be structured to satisfy individual investor requirements regarding, for example, the degree of risk, the mix of capital growth and income, and the degree of asset diversification. Collective investment institutions comprise the following:

- life insurance offices;
- superannuation and approved deposit funds;
- public unit trusts;
- friendly societies;
- common funds; and
- cash management trusts.

Funds of a speculative nature that do not offer redemption facilities—for example, agricultural and film trusts—are excluded.

To derive the total assets of collective investment institutions in Australia on a consolidated basis, it is necessary to eliminate the cross investment between the various types of institution. For example, investments by superannuation funds in public unit trusts are excluded from the assets of superannuation funds in a consolidated presentation.

Although statistics for each of these institutions were presented earlier in this chapter, the accompanying tables summarise their consolidated position (i.e. after the cross investment between the institutions has been eliminated). Table 26.21 shows their assets by type of institution, and table 26.22 their assets by type of investment.

### 26.21 ASSETS OF MANAGED FUNDS, By Type of Collective Investment Institution—30 June 1998

Type of fund	Total	Cross invested	Consolidated
	\$m	\$m	\$m
Life offices	157 993	12 101	145 892
Superannuation funds	229 956	36 147	193 809
Public unit trusts	81 441	8 220	73 221
Friendly societies	6 807	38	6 769
Common funds	7 018	112	6 907
Cash management trusts	17 340	—	17 340
<b>Total</b>	<b>500 556</b>	<b>56 618</b>	<b>443 938</b>

Source: *Managed Funds, Australia* (5655.0).

**26.22 CONSOLIDATED ASSETS OF MANAGED FUNDS, By Type of Investment—At 30 June**

	1996	1997	1998
Type of investment	\$m	\$m	\$m
Deposits, loans and placements	39 117	47 435	58 979
Short-term debt securities	37 967	46 315	51 614
Long-term debt securities	55 586	59 343	65 061
Equities and units in trusts	93 595	117 123	129 585
Land and buildings	37 474	41 009	47 745
Overseas assets	48 067	62 536	77 464
Other assets	12 183	14 330	13 489
<b>Total</b>	<b>323 990</b>	<b>388 092</b>	<b>443 938</b>

Source: *Managed Funds, Australia* (5655.0).

## Investment managers

A further development within the managed funds industry is the emergence of specialist investment managers. They are employed on a fee-for-service basis to manage and invest in approved assets on their clients' behalf. They usually act for the smaller collective investment institutions such as public unit trusts. They are not accessible to the small investor. Investment managers provide a sophisticated level of service, matching assets and liabilities. They act in the main as the managers of pooled funds, but also manage clients' investments on an individual portfolio basis.

A considerable proportion of the assets of collective investment institutions, particularly the statutory funds of life offices and assets of

superannuation funds, is channelled through investment managers. At 30 June 1998, \$345b, or 69% of the unconsolidated assets of collective investment institutions, were channelled through investment managers. Table 26.23 shows the total unconsolidated assets of each type of collective investment institution and the amount of these assets invested through investment managers.

Investment managers also accept money from investors other than collective investment institutions. At 30 June 1998, investment managers invested \$65b on behalf of government bodies, general insurers and other clients, including overseas clients.

**26.23 ASSETS OF MANAGED FUNDS, Invested through Investment Managers—30 June 1998**

Type of fund	Unconsolidated assets of managed funds	Assets invested with investment managers
	\$m	\$m
Life offices(a)	157 993	126 546
Superannuation and approved deposit funds	229 956	139 860
Public unit trusts	81 441	55 423
Friendly societies	6 807	5 655
Common funds	7 018	4 064
Cash management trusts	17 340	13 854
<b>Total</b>	<b>500 556</b>	<b>345 402</b>

(a) Includes both superannuation and ordinary business.

Source: *Managed Funds, Australia* (5655.0).

## Lending by financial institutions

The lending activities of financial institutions are grouped for statistical purposes into four major types of lending—housing, personal, commercial and leasing. Information regarding housing finance is presented in *Chapter 8, Housing*. Table 26.24 shows the size of commitments by financial institutions for the four types of lending. It should be noted that, although commitments are firm offers of finance made by institutions that have been accepted by borrowers, not all commitments are taken up by borrowers.

**26.24 LENDING COMMITMENTS BY FINANCIAL INSTITUTIONS**

	1995-96	1996-97	1997-98
Type of lending activity	\$m	\$m	\$m
Housing finance	43 677	49 979	54 576
Personal finance	32 282	35 568	42 908
Commercial finance	139 334	154 536	172 503
Lease finance	7 107	7 379	8 982
<b>Total</b>	<b>222 400</b>	<b>247 462</b>	<b>278 969</b>

Source: See the sources for the tables which follow for each type of lending.

## Lease finance

The statistics in tables 26.25 and 26.26 measure lease finance commitments made by significant lenders (banks, money market corporations, finance companies, general financiers, etc.) to trading and financial enterprises, non-profit organisations, governments, public authorities and individuals.

Whereas table 26.25 presents lease finance commitments by type of lessor, table 26.26 presents them by type of good leased.

**26.25 LEASE FINANCE COMMITMENTS, By Type of Lessor**

	1995-96	1996-97	1997-98
Type of lessor	\$m	\$m	\$m
All banks	2 394	2 676	2 995
Money market corporations	322	366	429
Finance companies	3 266	3 191	3 741
General financiers	1 126	1 146	1 817
<b>Total</b>	<b>7 107</b>	<b>7 379</b>	<b>8 982</b>

Source: Lease Finance, Australia (5644.0.40.002).

**26.26 LEASE FINANCE COMMITMENTS, By Type of Good Leased**

	1995-96	1996-97	1997-98
Type of good	\$m	\$m	\$m
Motor vehicles and other transport equipment	4 215	4 216	5 173
Construction and earth moving equipment	352	366	410
Agricultural machinery and equipment	396	490	534
Automatic data processing equipment and office machinery	1 122	1 139	1 591
Shop and office furniture, fittings and equipment	260	278	278
Other goods	762	889	1 046
<b>Total</b>	<b>7 107</b>	<b>7 379</b>	<b>8 982</b>

Source: Lease Finance, Australia (5644.0.40.002).

## Personal finance

Tables 26.27 and 26.28 present statistics of commitments made by significant lenders (banks, credit cooperatives, finance companies, etc.) to lend to individuals for their own personal (non-business) use. The revolving credit commitments provided in table 26.28 include commitments for overdrafts, credit cards and other personal revolving lines of credit.

**26.27 PERSONAL FINANCE COMMITMENTS(a),  
By Type of Lender**

	1995–96	1996–97	1997–98
Type of lender	\$m	\$m	\$m
All banks	22 833	25 912	31 477
Finance companies	5 318	5 391	6 655
Credit cooperative	3 043	3 222	3 327
Other lenders(b)	1 088	1 043	1 449
<b>Total</b>	<b>32 282</b>	<b>35 568</b>	<b>42 908</b>

(a) Includes both fixed loan facilities and new and increased lending commitments under revolving credit facilities.

(b) Includes permanent building societies, general financiers, and retailers.

Source: *Personal Finance, Australia* (5642.0.40.002).

**26.28 PERSONAL FINANCE COMMITMENTS, By  
Type of Facility**

	1995–96	1996–97	1997–98
Type of facility	\$m	\$m	\$m
Fixed loan commitments	20 931	21 127	22 279
Revolving credit commitments			
New and increased credit limits	11 351	14 441	20 629
Cancellations and reductions in credit limits	7 773	7 110	7 153
Credit limits at 30 June			
Total	44 402	51 601	64 245
Used	18 047	21 358	28 103

Source: *Personal Finance, Australia* (5642.0.40.002).

## Commercial finance

The statistics in tables 26.29 and 26.30 measure commitments, made by significant lenders (banks, finance companies, money market corporations, etc.) to lend to government, private and public enterprises, non-profit organisations and individuals for investment and business purposes.

**26.29 COMMERCIAL FINANCE  
COMMITMENTS(a), By Type of Lender**

	1995–96	1996–97	1997–98
Type of lender	\$m	\$m	\$m
All banks	106 060	113 689	132 657
Finance companies	7 676	7 786	5 985
Money market corporations	18 691	26 196	23 976
Other lenders(b)	6 907	6 915	9 884
<b>Total</b>	<b>139 334</b>	<b>154 536</b>	<b>172 503</b>

(a) Includes both fixed loan facilities and new and increased lending commitments under revolving credit facilities.

(b) Includes permanent building societies, general financiers, and pastoral finance companies.

Source: *Commercial Finance, Australia* (5643.0.40.002).

**26.30 FIXED COMMERCIAL FINANCE  
COMMITMENTS, By Purpose**

	1995–96	1996–97	1997–98
Purpose	\$m	\$m	\$m
Construction	6 576	7 435	10 865
Purchase of real property(a)	19 617	24 501	29 599
Purchase of plant and equipment	7 505	9 728	7 707
Refinancing	11 313	12 680	12 802
Other purposes	19 307	21 634	30 982
<b>Total</b>	<b>64 317</b>	<b>75 976</b>	<b>91 234</b>

(a) Purchase of real property includes those finance commitments to individuals for the purchase of dwellings for rental or resale.

Source: *Commercial Finance, Australia* (5643.0.40.002).

## Money and the payments system

The payments system supports trade and commerce in a market economy. Notes and coin are one means of payment. Liquid balances held at financial institutions are also available potentially for transactions needs, under cheque and other forms of transfer facilities, and thus add to the money supply.

Under the new financial regulatory framework which came into effect from 1 July 1998, the Reserve Bank has stronger regulatory powers in the payments system in accordance with the *Payments Systems (Regulations) Act 1998*, to be exercised by a new Payments System Board within the Bank.

### Money

Australia has a decimal system of currency, the unit being the dollar, which is divided into 100 cents. Australian notes are issued in the denominations of \$5, \$10, \$20, \$50 and \$100, and coins in the denominations of 5c, 10c, 20c, 50c, \$1 and \$2. \$1 and \$2 notes were replaced by coins in 1984 and 1988 respectively, and 1c and 2c coins ceased to be issued from 1 February 1992. Table 26.31 shows the value of notes on issue at the last Wednesday of June of the last three financial years. Table 26.32 shows the value of coin on issue at the same time points.

**26.31 VALUE OF AUSTRALIAN NOTES ON ISSUE**

	Last Wednesday in June		
	1996	1997	1998
	\$m	\$m	\$m
\$1	19	19	19
\$2	48	47	47
\$5	337	351	361
\$10	583	601	617
\$20	1 868	1 837	1 804
\$50	7 928	8 912	9 523
\$100	8 399	8 297	9 280
<b>Total</b>	<b>19 182</b>	<b>20 064</b>	<b>21 651</b>
	%	%	%
Increase	3.5	4.6	7.9

Source: Reserve Bank of Australia.

**26.32 VALUE OF AUSTRALIAN COIN ON ISSUE**

	Last Wednesday in June		
	1996	1997	1998
	\$m	\$m	\$m
1c	23	23	23
2c	31	30	30
5c	103	107	112
10c	98	99	102
20c	139	143	148
50c	205	210	215
\$1	328	352	365
\$2	469	492	518
<b>Total</b>	<b>1 394</b>	<b>1 455</b>	<b>1 511</b>
	%	%	%
Increase	4.8	4.4	3.8

Source: Reserve Bank of Australia.

### Money supply measures

The money supply, as measured and published by the Reserve Bank, refers to the amount of cash held by the public plus deposits with specified financial institutions. The measures range from the narrowest category, *money base*, through to the widest category, *broad money*, with other measures in between. The measures mainly used are as follows.

- *Money base*, which comprises holdings of notes and coin by the private sector, deposits of banks with the Reserve Bank, and other Reserve Bank liabilities to the private sector.
- *M3*, which is defined as currency plus bank deposits of the private non-bank sector.
- *Broad money*, which is defined as M3 plus borrowings from the private sector by non-bank financial intermediaries (including cash management trusts) less their holdings of currency and bank deposits.

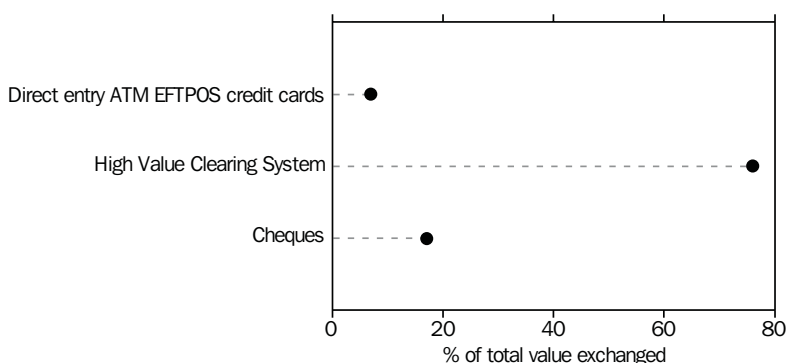
The money supply under each of these measures at end June of the last three years is shown in table 26.33.

**26.33 MONEY SUPPLY MEASURES—  
As at 30 June**

	1996	1997	1998
	\$m	\$m	\$m
Money base	24 546	34 115	31 424
M3	290 485	321 014	340 891
Broad money	349 389	383 307	405 770

Source: Reserve Bank of Australia.



**26.34 MEANS OF PAYMENT USED FOR EXCHANGE DURING MAY 1998**

Source: Australian Payments Clearing Association Limited, Annual Report 1998.

## Payments system

The High Value Clearing System (HVCS) was implemented in August 1997. The HVCS allows all holders of Reserve Bank settlement accounts (that is, all banks, building societies and credit unions) to settle large value payments through a system designed to process a high volume of transactions.

Initially, the settlement of payments was on a net deferred basis, where settlement of interbank obligations was not completed until 9 am on the day following the sending of payment instructions. This was changed to a real-time gross settlement (RTGS) basis on 22 June 1998. This new settlement basis, where payments are settled immediately, contributes substantially to the reduction of settlement risk and systemic risk in the Australian payments system.

Graph 26.34 shows that institutions in the payments clearing system (such as banks) accounted for most of the value exchanged in the Australian economy. Payment by cheque comes next, followed by use of Electronic Funds

Transfer at Point of Sale (EFTPOS), Automatic Teller Machines (ATM) and credit cards.

Table 26.35 highlights the growth of publicly available electronic access points into the payments system. The major growth has been in the number of EFTPOS terminals in Australia as more retailers provide a means to transfer funds electronically at the point of sale. This enables their customers to use debit cards as well as credit cards.

**26.35 ELECTRONIC ACCESS POINTS**

	June 1996	June 1997	June 1998
	no.	no.	no.
Automatic teller machines	7 718	8 182	8 814
EFTPOS terminals	136 645	164 199	218 330

Source: Australian Payments Clearing Association Limited, Annual Report 1998.

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## Introduction

The main functions of government are the provision of non-market services, the regulation of economic and social conditions, and the redistribution of income between sections of the community. These activities are primarily financed by taxation and are carried out by entities in the general government sector. In addition to this core activity, governments can also own or control agencies that sell goods or services to the public and which operate largely on a commercial (or market) basis. Historically, these public trading enterprises and public financial enterprises were set up by governments to create new industries, to foster competition and to allow governments to influence pricing policy.

The statistics in this chapter measure the activity of the non-financial public sector, which comprises general government entities, and public trading enterprises, which provide goods and non-financial services. The non-financial public sector is sometimes referred to as the 'government' sector, but this is technically incorrect because it currently excludes government financial enterprises.

The Australian system of Government Finance Statistics (GFS) is used to derive the statistics presented in this chapter. GFS focuses on financial transactions such as governments' spending, lending, taxing and borrowing activities, and reflects the impact of these transactions on other sectors of the economy. GFS comprises both cash (for general government) and accrual (for public trading enterprises) methods of recording transactions, and is based on international standards specified in the International Monetary Fund's *A Manual on Government Finance Statistics* and the United Nations' *A System of National Accounts* (SNA).

## Public sector

The public sector comprises all organisations owned or controlled by any of the three levels of government within the Australian political system:

- Commonwealth;
- State/Territory; and
- local.

It can be divided into the institutional sectors described below, based on the characteristics of the organisations it comprises. These sectors are:

- *General government.* The principal function of general government entities is to provide non-market goods and services (e.g. roads, hospitals, libraries) primarily financed by taxes, to regulate and influence economic activity, to maintain law and order and to redistribute income by means of transfer payments.

This institutional sector covers the departments of the Commonwealth Government, State Governments and local government municipalities. It also includes agencies and government authorities under departmental administration which are engaged in the provision of public administration, defence, law enforcement, welfare, public education and health. Also included are non-departmental bodies which independently perform the government functions of regulation (e.g. Nurses Registration Boards and the Maritime Safety Authority), provision of non-market services (e.g. the Australian Broadcasting Corporation) and redistribution of income (e.g. the Aboriginal and Torres Strait Islander Commission). Some of these bodies may be corporations, but they are still considered part of the general government sector if they perform general government functions.

Unincorporated government enterprises which provide goods and services to their governments and to the public at prices that are not economically significant (such as cafeterias for government employees, and municipal swimming pools) are also included in this sector. In addition, government quasi-corporations which sell their output exclusively to other government units are classified as general government units.

- *Public trading enterprises.* The main function of public trading enterprises is to provide goods and services which are predominantly market, non-regulatory and non-financial in nature and financed through sales to consumers of these goods and services.

Enterprises in the public trading enterprises sector differ from those in the general government sector in that all or most of their production costs are recovered from

consumers, rather than being financed from the general taxation revenue of government. Some enterprises, however, do receive subsidies to make up for shortfalls incurred as a result of government policy, for example in the provision of 'community service obligations' at concessional rates.

Public trading enterprises vary in their degree of 'commerciality', from those which are quite heavily reliant on parent governments for subsidies, such as rail and bus transport undertakings, to those which are net contributors to government revenue. Governments may exercise control over public trading enterprises by either owning more than 50% of the voting stock or otherwise controlling more than half the shareholders' voting power, or through legislation, decree or regulation which empowers the government to determine corporate policy or to appoint the directors. Examples of public trading enterprises are Telstra, Australia Post, State Rail and local electricity, bus and transport operations.

- *Public financial enterprises.* These are government owned or controlled enterprises which engage in financial intermediation (i.e. trade in financial assets and liabilities), such as government banks and insurance offices, or home lending schemes.

Public financial enterprises are currently excluded from GFS. They are included, along with the equivalent private sector enterprises, in statistics which highlight the distinct features of financial intermediation activity (see *Chapter 26, Financial System*).

The Australian GFS system presents statistics relating to:

- consolidated transactions of the various non-financial public authorities, presented so that the economic impact of government activity can be assessed;
- transactions of the different levels of government, reflecting their different roles in undertaking and financing their expenditure programs;
- transactions of each government jurisdiction, so that the statistics can be used to indicate the comparative standing of each government jurisdiction in terms of its expenditure, its sources of revenue, and its financing transactions; and
- transactions presented to identify the purposes that are being served by government expenditure programs.

To assist users, *Government Finance Statistics Australia: Concepts, Sources and Methods* (5514.0) outlines the major concepts, provides definitions of the statistical units, and contains the main classifications employed. The GFS classifications applied in the tables in this chapter are:

- the Economic Type Framework (ETF) which categorises outlays, revenue and grants received and financing according to their economic character, to facilitate the study of the macroeconomic effects of government activity;
- the Government Purpose Classification (GPC) which classifies outlays according to the purpose or function served; and
- the Taxes, Fees and Fines Classification (TFFC) which classifies this major form of government revenue according to type of tax, fee or fine collected.

### General government output as a percentage of GDP

Despite the fact that most goods and services provided by general government bodies are not normally sold, their output is still regarded as part of production. The output of government is valued at cost and comprises total final consumption expenditure (principally wages and salaries paid to the employees of general government bodies and the cost of purchased goods and services used), plus an allowance for the consumption of fixed capital. Table 27.1 shows general government's share of GDP for the years 1992–93 to 1996–97.

**27.1 GENERAL GOVERNMENT OUTPUT, Percentage of GDP(a)**

	1992–93	1993–94	1994–95	1995–96	1996–97
Sector	%	%	%	%	%
Commonwealth	5.7	5.6	5.5	5.3	5.1
State, Territory and Local	12.3	12.1	11.8	11.7	11.9
<b>Total</b>	<b>18.0</b>	<b>17.6</b>	<b>17.3</b>	<b>17.0</b>	<b>17.1</b>

(a) The expenditure based estimates of GDP and the estimates for consumption of fixed capital used in the above calculations are from Australian National Accounts: National Income, Expenditure and Product, 1996–97 (5204.0).

Source: *Government Finance Statistics, Australia, 1996–97* (5512.0).

**Deficit**

In GFS, the deficit/surplus reflects the balance between government outlays and government revenue. It measures the extent to which government is increasing (surplus) or decreasing (deficit) its net financial position.

Previously, net advances (covering loans and repayments of loans made for policy purposes and purchases/sales of equity) were included in outlays. These transactions are no longer classified as outlays because they are considered to be more in the nature of financing. This change results in a more useful measure of total outlays and removes the necessity to calculate the deficit adjusted for net advances.

Graph 27.2 shows the movements in the deficit as a percentage of the income based measure of GDP (GDP(I)) from 1966–67 to 1996–97 for the Commonwealth Government and State/Territory and local levels of government combined.

The graph demonstrates that the general government deficit for all levels of government combined shows a strong cyclical pattern, which is mainly driven by the Commonwealth Government. It is also evident that, over the period shown in the graph, there has been a reduction in the average level of deficits for State/Territory and local governments, which has been offset by an increase in the average level of the deficit for the Commonwealth Government.

**27.2 GENERAL GOVERNMENT DEFICIT/SURPLUS, Percentage of GDP**

Source: *Government Finance Statistics, Australia, 1996–97* (5512.0).

## New treatment of universities in Government Finance Statistics

Previously, universities were classified to the government jurisdiction under which they were established. Therefore, most university transactions were included in the State and Territory general government sector. However, the ABS considers that universities are more appropriately classified to a separate 'universities' sector within the general government sector for the Commonwealth and States/Territories combined, to reflect the role that both the Commonwealth Government and all State/Territory Governments have in their financing and control. Consequently, statistics for universities are no longer included in the statistics for Commonwealth or State/Territory governments and are presented separately in table 27.3.

## Government sector's contribution to national saving

The deficit is split between the current deficit and the capital deficit. The capital deficit is equal to capital outlays less capital revenues and capital grants received. The current deficit, which is the cash-based measure of government saving, is equal to current outlays minus current revenues and current grants received less increase in provisions. Refer to *Chapter 29, National Accounts* for further details relating to general government saving.

### 27.3 UNIVERSITIES—General Government

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
	\$m	\$m	\$m	\$m	\$m	\$m
Economic transactions						
Outlays						
Current outlays						
Gross expenditure on goods and services	4 586	5 059	5 428	5 905	6 251	6 761
Less sales of goods and services(a)	1 263	1 782	2 080	2 282	2 595	2 867
Final consumption expenditure	3 323	3 277	3 348	3 623	3 656	3 894
Interest payments	8	9	10	12	16	20
Other transfer payments	151	209	225	237	265	272
Total current outlays	3 482	3 495	3 583	3 872	3 937	4 186
Capital outlays						
Expenditure on new fixed assets	494	742	869	868	888	938
Plus expenditure on second-hand assets (net)	-27	-17	-24	-49	-40	-76
Gross fixed capital expenditure	467	725	845	819	848	862
Expenditure on land and intangible assets (net)	2	-5	7	44	-4	37
Grants	2	2	0	0	1	1
Other capital outlays	-1	6	2	-6	-3	-5
Total capital outlays	470	728	854	857	842	895
Total outlays	3 952	4 223	4 437	4 729	4 779	5 081
Revenue						
Interest received	259	209	225	199	253	235
Capital grants received	3 409	3 785	4 093	4 258	4 439	4 559
Other revenue	341	332	334	325	349	350
Total revenue	4 009	4 326	4 652	4 782	5 041	5 144
Financing and deficit measures						
Advances received (net)	1	-2	0	0	19	22
Advances paid (receipts less payments)	1	-9	2	2	9	-1
Borrowing (net)	14	25	11	44	17	55
Other financing transactions (net)	-73	-117	-228	-99	-307	-139
<b>Total financing and deficit measures</b>	<b>-57</b>	<b>-103</b>	<b>-215</b>	<b>-53</b>	<b>-262</b>	<b>-63</b>
Deficit (+) or surplus (-)	-57	-103	-215	-53	-262	-63
Of which						
Current deficit	-274	-469	-886	-851	-1 042	-874
Capital deficit	217	366	671	798	780	811

(a) This item provides an indication of the extent of government charges levied. The charges are offset against gross expenditure in calculating final consumption expenditure, and comprise mainly receipts under the Higher Education Contribution Scheme (HECS).

Source: *Government Finance Statistics, Australia 1996-97* (5512.0).



## Financing of all levels of government combined

The outlays, revenue and financing transactions of the general government and public trading enterprise sectors for all levels of government combined are shown in tables 27.4 and 27.5. Table 27.6 shows a dissection of taxes, fees and fines, the largest component of government revenue.

In 1996–97, outlays for the general government sector for Australia totalled \$182,289m, a 4.7% increase over the 1995–96 result of \$174,183m. Outlays for the public trading enterprise sector fell 3.6% from \$22,717m in 1995–96 to \$21,891m in 1996–97. Outlays of public trading enterprises comprise mainly capital expenditures, interest payments and transfers to government, and do not include operating expenditure, which is offset against revenue.

General government total revenue increased by 8.2% from \$167,288m in 1995–96 to \$180,925m in 1996–97. The proportion of general government total revenue raised from taxes, fees and fines for 1996–97 was 90.7%.

Public trading enterprise revenue rose by 7.2% from \$15,102m in 1995–96 to \$16,185m in 1996–97. The predominant source of public

trading enterprise revenue is the net operating surplus of enterprises, which comprises operating revenue less operating expenditure. This item contributed 74% of public trading enterprise revenue in 1996–97.

The general government sector deficit fell from \$7,937m in 1995–96 to \$2,318m in 1996–97. The current surplus rose from \$3,326m in 1995–96 to \$10,258m in 1996–97, reflecting higher revenue from taxation together with a slightly lower increase in current expenditure. The capital deficit rose from \$11,263m in 1995–96 to \$12,576m in 1996–97.

The deficit for the public trading enterprise sector, \$232m in 1995–96, moved to a surplus of \$1,310m in 1996–97, due mainly to reduced capital expenditure in 1996–97.

The outlays, revenue and deficit/surplus of each level of government are not additive, as financial transactions may occur between the Commonwealth Government, State/Territory Governments and local governments. For example, grants are paid by the Commonwealth Government to State Governments or local governments (either directly or via the State Government for onpassing), interest is paid and advances are made across the three levels.

## 27.4 ALL AUSTRALIAN GOVERNMENTS AND UNIVERSITIES, General Government

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
	\$m	\$m	\$m	\$m	\$m	\$m
Economic transactions						
Outlays						
Current outlays						
Gross expenditure on goods and services	73 982	77 581	81 051	84 165	89 111	93 252
Less sales of goods and services(a)	9 586	10 527	11 842	12 619	13 379	14 056
Final consumption expenditure	64 396	67 054	69 209	71 546	75 732	79 196
Interest payments	11 368	11 478	12 895	14 354	15 438	14 489
Subsidies to public trading enterprises	3 211	2 908	2 919	2 596	2 507	3 207
Personal benefit payments	42 562	46 300	49 921	52 051	55 942	58 695
Other transfer payments	8 787	10 158	10 954	11 848	12 786	13 396
Total current outlays	130 324	137 898	145 898	152 395	162 405	168 983
Capital outlays						
Expenditure on new fixed assets	9 654	10 447	10 302	10 688	11 130	11 811
Plus expenditure on second-hand assets (net)	-708	-1 012	-1 156	-1 128	-1 639	-1 603
Gross fixed capital expenditure	8 946	9 435	9 146	9 560	9 491	10 208
Expenditure on land and intangible assets (net)	-66	-292	-566	-431	-242	-61
Grants to public trading enterprises	1 822	1 965	2 080	2 006	1 891	2 410
Grants to other sectors	914	645	609	481	508	620
Other capital outlays	49	58	62	40	130	129
Total capital outlays	11 665	11 811	11 331	11 656	11 778	13 306
Total outlays	141 989	149 709	157 229	164 051	174 183	182 289
Revenue						
Taxes, fees and fines	115 509	118 566	125 972	139 091	152 386	164 045
Interest from public trading enterprises	1 296	1 046	938	891	627	558
Interest from other enterprises	3 682	3 391	3 234	3 694	4 096	3 848
Other revenue	6 267	7 054	9 648	8 128	10 179	12 474
Total revenue	126 754	130 057	139 792	151 804	167 288	180 925
Financing and deficit measures						
Advances to public financial enterprises (receipts less payments)	-45	267	1 663	-12	302	282
Advances to public trading enterprises (receipts less payments)	-180	80	662	175	6 130	7 022
Advances to foreign governments and organisations (receipts less payments)	-181	-170	-150	-138	-266	-223
Other advances paid (receipts less payments)	-2 043	914	2 612	1 242	2 768	3 361
Borrowing (net)	20 815	23 591	19 495	12 868	-5 417	-7 994
Increase in provisions (net)	-1 055	-1 333	-1 198	-1 118	-1 042	-954
Other financing transactions (net)	-2 076	-3 697	-5 647	-770	4 420	-130
<b>Total financing and deficit measures</b>	<b>15 235</b>	<b>19 652</b>	<b>17 437</b>	<b>12 247</b>	<b>6 895</b>	<b>1 364</b>
Less increase in provisions (net)	-1 055	-1 333	-1 198	-1 118	-1 042	-954
Deficit (+) or surplus (-)	16 290	20 985	18 635	13 365	7 937	2 318
Of which						
Current deficit(b)	4 797	9 439	7 697	2 097	-3 326	-10 258
Capital deficit(c)	11 493	11 546	10 938	11 268	11 263	12 576

(a) This item provides an indication of the extent of government charges levied. The charges (excluding inter-agency charges) are offset against gross expenditure in calculating final consumption expenditure and mainly comprise sales to the private sector.

(b) Current outlays minus current revenues and current grants received less increase in provisions. (c) Capital outlays less capital revenues and capital grants received.

Source: Government Finance Statistics, Australia, 1996-97 (5512.0).

## 27.5 ALL AUSTRALIAN GOVERNMENTS, Public Trading Enterprises

	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m
Economic transactions						
Outlays						
Current outlays						
Interest payments to general government	1 300	1 054	937	896	630	561
Interest payments to other enterprises	7 068	6 041	5 247	5 086	4 519	4 242
Income transferred to general government	1 813	1 872	3 433	3 620	5 348	6 812
Other transfer payments	1 105	1 729	1 462	1 331	1 739	966
Total current outlays	11 286	10 696	11 079	10 933	12 236	12 581
Capital outlays						
Expenditure on new fixed assets	12 033	11 420	10 954	11 927	11 528	11 762
Plus expenditure on second-hand assets (net)	-922	-1 523	-1 798	-839	-1 051	-2 797
Gross fixed capital expenditure	11 111	9 897	9 156	11 088	10 477	8 965
Expenditure on land and intangible assets (net)	124	72	-314	-171	-64	516
Grants to other levels of government	0	45	52	28	10	301
Grants to other sectors	20	114	44	58	55	0
Other capital outlays	-351	360	-593	-550	3	-472
Total capital outlays	10 904	10 488	8 345	10 453	10 481	9 310
Total outlays	22 190	21 184	19 424	21 386	22 717	21 891
Revenue						
Sales of goods and services	60 342	62 170	68 272	70 965	67 857	66 799
Plus subsidies received	3 088	2 929	2 967	2 630	2 643	3 294
Less operating expenditure	52 557	53 517	58 123	61 410	59 052	58 118
Net operating surplus	10 873	11 582	13 116	12 185	11 448	11 975
Interest received	1 120	781	587	844	848	930
Capital grants received	1 944	2 061	2 176	2 103	1 998	2 497
Other revenue	787	764	938	1 158	808	783
Total revenue	14 724	15 188	16 817	16 290	15 102	16 185
Financing and deficit measures						
Advances received (net)	186	-132	-660	-166	-6 123	-7 020
Advances paid (receipts less payments)	214	49	-254	72	10 002	6 973
Borrowing (net)	396	-429	-3 400	-3 367	-4 920	1 035
Increase in provisions for depreciation	7 466	7 158	7 153	7 670	7 094	7 157
Other increase in provisions (net)	57	219	-545	916	289	-141
Other financing transactions (net)	-853	-869	313	-29	1 273	-2 298
<b>Total financing and deficit measures</b>	<b>7 466</b>	<b>5 996</b>	<b>2 607</b>	<b>5 096</b>	<b>7 615</b>	<b>5 706</b>
Less increase in provisions (net)	7 523	7 377	6 608	8 586	7 383	7 016
Deficit (+) or surplus (-)	-57	-1 381	-4 001	-3 490	232	-1 310
Of which						
Current deficit	-8 264	-9 089	-9 342	-10 811	-7 532	-7 432
Capital deficit	8 207	7 708	5 341	7 321	7 764	6 122

Source: Government Finance Statistics, Australia, 1996–97 (5512.0).

## 27.6 TAXES, FEES AND FINES OF ALL LEVELS OF GOVERNMENT

Type of tax	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Taxes on income</b>						
Income taxes levied on individuals	46 830	47 528	50 571	54 635	60 602	66 278
Income taxes levied on enterprises	14 496	15 051	14 186	17 703	19 580	22 025
Income taxes levied on non-residents	903	827	765	777	1 194	936
<i>Total taxes on income</i>	<i>62 230</i>	<i>63 406</i>	<i>65 522</i>	<i>73 115</i>	<i>81 376</i>	<i>89 238</i>
<b>Employers' payroll taxes</b>						
General taxes (payroll tax)	5 792	5 642	5 862	6 406	6 895	7 404
Selective taxes (stevedoring industry charges)	54	45	40	64	14	0
Other employers' labour force taxes	1 284	1 302	1 376	2 682	2 961	3 129
<i>Total employers' payroll taxes</i>	<i>7 130</i>	<i>6 989</i>	<i>7 277</i>	<i>9 152</i>	<i>9 869</i>	<i>10 533</i>
<b>Taxes on property</b>						
Taxes on immovable property(a)	6 533	6 698	6 718	6 747	6 976	7 367
Taxes on financial and capital transactions	4 479	4 901	6 016	5 891	6 156	7 057
<i>Total taxes on property</i>	<i>11 012</i>	<i>11 599</i>	<i>12 734</i>	<i>12 639</i>	<i>13 133</i>	<i>14 423</i>
<b>Taxes on provision of goods and services</b>						
General taxes (sales tax)	9 113	9 252	10 414	11 624	12 970	13 293
Excise and levies						
Crude oil and LPG	64	116	62	27	13	9
Other excises	9 417	9 560	10 751	11 973	12 835	13 282
Agricultural production taxes	735	633	647	692	669	617
Levies on statutory corporations	423	469	490	517	456	416
<i>Total excises and levies</i>	<i>10 639</i>	<i>10 778</i>	<i>11 950</i>	<i>13 209</i>	<i>13 974</i>	<i>14 323</i>
Taxes on international trade	3 350	3 336	3 231	3 479	3 129	3 296
Taxes on gambling	2 012	2 231	2 576	2 960	3 310	3 500
Taxes on insurance	1 298	1 430	1 574	1 659	1 734	1 787
<i>Total taxes on provision of goods and services</i>	<i>26 412</i>	<i>27 026</i>	<i>29 745</i>	<i>32 931</i>	<i>35 116</i>	<i>36 199</i>
<b>Taxes on use of goods and performance of activities</b>						
Motor vehicle taxes	2 493	2 802	3 130	3 392	3 512	3 625
Franchise taxes	2 842	3 394	3 999	4 197	4 903	5 221
Other	254	272	447	451	647	653
<i>Total taxes on use of goods and performance of activities</i>	<i>5 589</i>	<i>6 468</i>	<i>7 577</i>	<i>8 041</i>	<i>9 062</i>	<i>9 499</i>
<b>Fees and fines</b>						
Compulsory fees	1 766	1 699	1 702	1 893	2 026	2 307
Fines	537	541	548	539	583	642
<i>Total fees and fines</i>	<i>2 303</i>	<i>2 240</i>	<i>2 250</i>	<i>2 432</i>	<i>2 609</i>	<i>2 949</i>
<b>Total taxes, fees and fines(b)</b>	<b>114 677</b>	<b>117 729</b>	<b>125 105</b>	<b>138 310</b>	<b>151 166</b>	<b>162 841</b>
Income taxes paid by public trading enterprises	833	838	867	781	1 220	1 204

(a) Partly estimated. (b) Excludes income taxes paid by public trading enterprises.

Source: Government Finance Statistics, Australia, 1996-97 (5512.0).

## Outlays by purpose

The Government Purpose Classification (GPC) is designed to identify the purposes for which government outlays are made. In conjunction with the Economic Type Framework (ETF), it provides information for the study of the socio-economic effects of government

transactions. Table 27.7 shows a time series of outlays by purpose, for the three levels of government combined. Outlays on social security and welfare, for example, rose 6.4% from \$49,219m in 1995-96 to \$52,367m in 1996-97 and comprised 27.1% of total government outlays.

**27.7 TOTAL OUTLAYS, ALL AUSTRALIAN GOVERNMENTS AND UNIVERSITIES, Consolidated Government by Purpose(a)(b)**

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Purpose classification	\$m	\$m	\$m	\$m	\$m	\$m
General public services	12 499	12 698	13 898	13 768	14 140	14 649
Defence	8 607	9 010	9 237	9 147	9 394	9 454
Public order and safety	5 630	5 642	5 765	6 183	6 696	7 406
Education						
Primary and secondary	11 485	11 843	12 028	12 322	13 036	13 908
University	4 222	4 549	4 708	5 051	5 049	5 305
Technical and further education	2 241	2 436	2 492	2 569	2 652	2 860
Other tertiary	24	18	22	53	86	104
Other education	1 916	2 084	2 046	2 109	2 144	2 303
<i>Total education</i>	<i>19 888</i>	<i>20 930</i>	<i>21 296</i>	<i>22 104</i>	<i>22 967</i>	<i>24 480</i>
Health						
Hospital and other institutional services	12 839	13 276	13 373	13 671	14 506	15 244
Community health services	5 562	6 171	6 590	7 330	8 058	8 537
Other health	2 974	3 220	3 682	4 172	4 741	5 097
<i>Total health</i>	<i>21 375</i>	<i>22 667</i>	<i>23 645</i>	<i>25 173</i>	<i>27 305</i>	<i>28 878</i>
Social security and welfare						
Social security	32 660	35 506	38 545	39 795	42 523	45 184
Welfare services	3 948	4 253	4 424	4 787	5 134	5 476
Other social security and welfare	1 453	1 338	1 430	1 499	1 562	1 707
<i>Total social security and welfare</i>	<i>38 061</i>	<i>41 097</i>	<i>44 399</i>	<i>46 081</i>	<i>49 219</i>	<i>52 367</i>
Housing and community amenities						
Housing and community development	2 060	2 056	1 718	2 347	2 041	1 547
Water supply	921	830	732	783	640	1 060
Sanitation and protection of the environment	1 653	1 657	1 573	1 896	2 112	1 979
Other community amenities	264	360	281	316	360	329
<i>Total housing and community amenities</i>	<i>4 898</i>	<i>4 903</i>	<i>4 304</i>	<i>5 342</i>	<i>5 153</i>	<i>4 915</i>
Recreation and culture						
Recreational facilities and services	1 942	2 106	2 115	1 878	2 415	2 895
Cultural facilities and services	931	940	1 139	1 367	1 518	1 590
Broadcasting and film production	700	691	522	612	731	710
Other recreation and culture	227	261	109	151	90	107
<i>Total recreation and culture</i>	<i>3 800</i>	<i>3 998</i>	<i>3 885</i>	<i>4 008</i>	<i>4 754</i>	<i>5 302</i>
Fuel and energy	3 375	2 624	2 115	3 475	3 417	2 795
Agriculture, forestry and fishing	2 723	3 395	2 406	2 108	3 114	2 592
Mining, manufacturing and construction	923	755	840	774	808	774
Transport and communications						
Road transport	5 690	6 513	6 215	6 124	6 738	7 032
Water transport	461	368	527	384	283	257
Rail and multi-mode transport	2 569	2 777	3 477	3 178	3 399	4 066
Air transport	2 214	1 300	809	1 300	566	579
Other transport	3	17	14	6	3	-65
Communications	2 529	2 880	2 459	3 639	4 194	3 333
<i>Total transport and communications</i>	<i>13 466</i>	<i>13 855</i>	<i>13 501</i>	<i>14 631</i>	<i>15 183</i>	<i>15 202</i>
Other economic affairs	3 703	4 963	5 002	5 177	5 551	4 807
Other purposes	19 260	18 360	19 205	20 273	20 565	19 403
<b>Total</b>	<b>158 208</b>	<b>164 897</b>	<b>169 498</b>	<b>178 244</b>	<b>188 266</b>	<b>193 023</b>

(a) Due to transactions between sectors, consolidated totals are not always the sum of totals for the general government and public trading enterprise sectors. (b) Data disaggregated by purpose were unavailable for the ACT. Where necessary, the ABS has estimated these data.

Source: Government Finance Statistics, Australia, 1996-97 (5512.0).

## **Commonwealth government finance**

The Commonwealth Government has exclusive responsibility under the Constitution for the administration of a wide range of functions including defence, foreign affairs and trade, and immigration. A distinctive feature of the Australian federal system is that the Commonwealth Government levies and collects all income tax, from individuals as well as from enterprises. It also collects a significant portion

of other taxes, including taxes on the provision of goods and services. The Commonwealth distributes part of this revenue to other levels of government, principally the States and Territories.

## **Outlays, revenue and financing transactions**

The outlays, revenue and financing transactions of the Commonwealth non-financial public sector for the six year period ending 1996–97 are summarised in tables 27.8 to 27.10.

## 27.8 COMMONWEALTH GOVERNMENT, General Government

	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m
Economic transactions						
Outlays						
Current outlays						
Gross expenditure on goods and services	23 070	24 558	25 682	26 376	27 571	27 764
Less sales of goods and services(a)	1 573	1 833	2 083	2 050	2 195	2 234
Final consumption expenditure	21 497	22 725	23 599	24 326	25 376	25 530
Interest payments	5 748	5 413	6 630	8 162	9 292	9 625
Subsidies to public trading enterprises	685	480	464	462	528	427
Personal benefit payments	41 127	44 747	48 320	50 267	54 089	56 836
Grants to State governments	20 546	21 480	22 326	23 483	24 706	25 445
Grants onpassed through State governments	5 155	3 848	2 524	2 764	2 908	3 089
Grants to private sector	1 576	1 901	2 011	2 479	3 098	2 939
Grants to universities	225	1 748	3 657	4 003	4 129	4 115
Grants to local governments	155	190	186	196	212	210
Other transfer payments	2 936	3 257	3 596	3 640	3 793	3 925
Total current outlays	99 650	105 789	113 313	119 782	128 131	132 141
Capital outlays						
Expenditure on new fixed assets	1 642	1 174	1 342	1 287	1 323	1 008
Plus expenditure on second-hand assets (net)	-110	-184	-428	-504	-397	-358
Gross fixed capital expenditure	1 532	990	914	783	926	650
Expenditure on land and intangible assets (net)	46	-15	-201	-80	-30	10
Grants to public trading enterprises	70	30	29	97	6	332
Grants to other levels of government	3 726	5 236	3 791	3 108	3 028	3 054
Grants to other sectors	555	312	214	186	160	168
Other capital outlays	-14	3	-24	-34	5	5
Total capital outlays	5 915	6 556	4 723	4 060	4 095	4 219
Total outlays	105 565	112 345	118 036	123 842	132 226	136 360
Revenue						
Taxes, fees and fines	88 395	89 702	94 238	105 944	116 859	125 944
Interest from public trading enterprises	504	306	243	159	129	90
Interest from other enterprises	2 505	2 195	1 838	1 693	1 335	1 074
Other	2 578	3 171	4 668	2 925	3 909	4 090
Total revenue	93 982	95 374	100 987	110 721	122 232	131 198
Financing and deficit measures						
Advances to public trading enterprises (receipts less payments)	-354	-19	420	11	617	3 091
Advances to foreign governments and organisations (receipts less payments)	-181	-170	-150	-138	-266	-223
Advances to other levels of government (receipts less payments)	2 753	2 669	1 314	2 017	4 128	1 012
Other advances paid (receipts less payments)	-162	24	1 811	-411	696	3 355
Borrowing (net)	9 597	16 206	14 829	12 775	4 172	-653
Increase in provisions (net)	-1 103	-1 330	-1 173	-1 157	-1 050	-966
Other financing transactions (net)	1 033	-409	-2	24	1 697	-454
<b>Total financing and deficit measures</b>	<b>11 583</b>	<b>16 971</b>	<b>17 049</b>	<b>13 121</b>	<b>9 994</b>	<b>5 162</b>
Less increase in provisions (net)	-1 103	-1 330	-1 173	-1 157	-1 050	-966
Deficit (+) or surplus (-)	12 686	18 301	18 222	14 278	11 044	6 128
Of which						
Current deficit(b)	6 771	11 746	13 499	10 218	6 949	1 909
Capital deficit(c)	5 915	6 555	4 723	4 060	4 095	4 219

(a) This item provides an indication of the extent of government charges levied. The charges (excluding inter-agency charges) are offset against gross expenditure in calculating final consumption expenditure and mainly comprise sales to the private sector.

(b) Current outlays minus current revenues and current grants received less increase in provisions. (c) Capital outlays less capital revenues and capital grants received.

Source: Government Finance Statistics, Australia, 1996–97 (5512.0).

## 27.9 COMMONWEALTH GOVERNMENT, Public Trading Enterprises

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Economic transactions	\$m	\$m	\$m	\$m	\$m	\$m
Outlays						
Current outlays						
Interest payments to general government	504	306	243	159	129	90
Interest payments to other enterprises	2 123	1 807	1 639	1 518	950	997
Income transferred to general government	405	339	1 117	937	1 384	1 484
Other transfer payments	634	1 251	1 039	958	1 349	666
Total current outlays	3 666	3 703	4 038	3 572	3 812	3 237
Capital outlays						
Expenditure on new fixed assets	4 959	4 039	3 357	4 331	4 419	4 685
Plus expenditure on second-hand assets (net)	-492	-304	-413	-262	-149	-281
Gross fixed capital expenditure	4 467	3 735	2 944	4 069	4 270	4 404
Expenditure on land and intangible assets (net)	12	14	-51	-16	28	-47
Grants to other levels of government	0	61	74	81	15	0
Other capital outlays	-432	306	-529	-388	-44	-540
Total capital outlays	4 047	4 116	2 438	3 746	4 269	3 817
Total outlays	7 713	7 819	6 476	7 318	8 081	7 054
Revenue						
Sales of goods and services	24 098	24 773	27 174	28 259	24 767	26 664
Plus subsidies received	549	469	468	468	504	369
Less operating expenditure	21 226	21 184	22 762	23 974	20 745	23 008
Net operating surplus	3 421	4 058	4 880	4 753	4 526	4 025
Interest	392	274	234	359	292	311
Capital grants	70	30	29	97	6	332
Other revenue	16	23	35	53	31	38
Total revenue	3 899	4 385	5 178	5 262	4 855	4 706
Financing and deficit measures						
Advances received (net)	354	19	-408	15	-581	-3 053
Advances paid (receipts less payments)	-27	2	3	0	0	0
Borrowing (net)	109	955	-1 318	-1 734	-328	3 012
Increase in provisions for depreciation	3 834	2 863	2 898	3 009	2 578	2 826
Other increase in provisions (net)	82	374	-117	1 003	94	163
Other financing transactions (net)	-538	-779	240	-237	1 463	-600
<b>Total financing and deficit measures</b>	<b>3 814</b>	<b>3 434</b>	<b>1 298</b>	<b>2 056</b>	<b>3 226</b>	<b>2 348</b>
Less increase in provisions (net)	3 916	3 237	2 781	4 012	2 672	2 989
Deficit (+) or surplus (-)	-102	197	-1 483	-1 956	554	-641
of which						
Current deficit	-4 079	-3 889	-3 892	-5 605	-3 709	-4 126
Capital deficit	3 977	4 086	2 409	3 649	4 263	3 485

Source: Government Finance Statistics, Australia, 1996-97 (5512.0).



**27.10 TOTAL OUTLAYS OF COMMONWEALTH GOVERNMENT, Consolidated Government by Purpose**

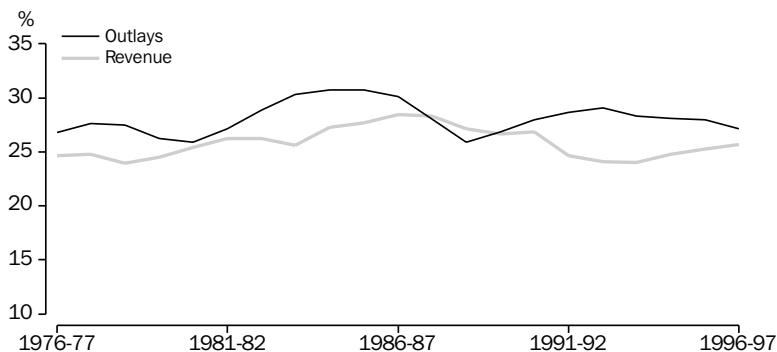
	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
Purpose classification	\$m	\$m	\$m	\$m	\$m	\$m
General public services	6 591	6 984	7 361	7 485	7 886	8 005
Defence	8 607	9 010	9 237	9 147	9 394	9 454
Public order and safety	933	883	851	884	914	1 194
Education						
Primary and secondary	3 198	3 442	3 633	3 780	3 913	4 011
Tertiary	4 328	4 828	5 201	5 623	5 897	6 007
Other education	302	350	375	365	295	378
<i>Total education</i>	7 828	8 620	9 209	9 768	10 105	10 396
Health						
Hospital and other institutional services	6 773	6 964	7 313	7 580	7 943	8 196
Other health	6 968	7 821	8 736	9 521	10 542	11 107
<i>Total health</i>	13 741	14 785	16 049	17 101	18 485	19 303
Social security and welfare	35 639	38 643	42 018	43 486	46 476	49 289
Housing and community amenities	1 322	1 443	1 224	1 167	1 149	886
Recreation and culture						
Recreational facilities and services	153	175	233	236	260	183
Cultural facilities and services	199	188	235	263	324	286
Broadcasting and film production	691	681	510	597	716	690
<i>Total recreation and culture</i>	1 043	1 044	978	1 096	1 300	1 159
Fuel and energy	701	717	672	836	926	1 026
Agriculture, forestry, fishing and hunting	1 528	2 103	1 130	1 139	1 791	1 264
Mining, manufacturing and construction	552	553	493	336	405	378
Transport and communications	6 939	6 867	5 263	6 900	6 735	6 019
Other economic affairs	2 450	3 092	3 154	3 451	4 186	3 303
Other purposes						
Public debt	7 872	7 220	8 269	9 680	10 241	10 621
Other	15 731	16 694	16 350	16 719	17 587	18 006
<i>Total other purposes</i>	23 603	23 914	24 619	26 399	27 828	28 627
<b>Total</b>	<b>111 476</b>	<b>118 657</b>	<b>122 259</b>	<b>129 195</b>	<b>137 578</b>	<b>140 304</b>

Source: Government Finance Statistics, Australia, 1996–97 (5512.0).

Graph 27.11 shows the relationship between the movements in outlays and revenue, as a percentage of GDP(I), for the Commonwealth Government from 1976–77 to 1996–97. The outlays in the graph exclude net advances (i.e. loans made for policy purposes, and sales/injections of equity) and therefore provide

a better measure of the underlying movement in government outlays. The Commonwealth Government outlays and revenues fluctuate strongly depending on prevailing economic conditions, and this is reflected in large swings in the deficit/surplus measure (see graph 27.2).

### 27.11 COMMONWEALTH GOVERNMENT OUTLAYS AND REVENUE, Percentage of GDP



Source: Government Finance Statistics, Australia, 1996-97 (5512.0).

### Financial assistance by the Commonwealth Government to the States and Territories

The taxes levied by the Commonwealth Government are used to finance the Commonwealth's own-purpose policy programs

and are also distributed to other levels of government, principally the States and Territories, as grants. The distributions are based on principles applied by the Commonwealth Grants Commission. Table 27.12 shows details of grants to States/Territories and local governments classified by purpose.

### 27.12 COMMONWEALTH GRANTS, By Purpose and State/Territory—1996-97

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Purpose classification	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
General public services	135	94	59	40	34	11	1	0	374
Public order and safety	107	140	91	46	26	26	11	7	454
Education									
Primary and secondary education	1 135	850	597	248	337	84	41	70	3 362
Tertiary education	1 461	1 163	784	369	433	107	51	20	4 388
Other	22	3	16	7	18	2	16	1	85
Total education	2 618	2 016	1 397	624	788	193	108	91	7 835
Health									
Hospital and other institutional services	1 560	1 070	919	500	502	147	84	73	4 855
Other	159	112	86	58	46	13	7	11	492
Total health	1 719	1 182	1 005	558	548	160	91	84	5 347
Social security and welfare	437	385	208	142	116	49	13	15	1 365
Housing and community amenities	338	238	81	66	106	29	41	18	917
Recreation and culture	10	0	6	0	0	7	0	0	23
Agriculture, forestry, fishing and hunting	93	20	60	15	10	6	7	0	211
Transport and communications	540	294	347	117	178	69	53	19	1 617
Other economic affairs	6	4	4	3	2	3	0	0	22
Other purposes	4 728	4 223	3 233	1 569	1 779	689	946	325	17 492
<b>Total</b>	<b>10 731</b>	<b>8 596</b>	<b>6 491</b>	<b>3 180</b>	<b>3 587</b>	<b>1 242</b>	<b>1 271</b>	<b>559</b>	<b>35 657</b>

Source: Unpublished data, Government Finance Statistics.

## State/Territory government finance

State/Territory governments perform the full range of government functions, other than those the Constitution deems the exclusive domain of the Commonwealth. The functions mainly administered by State/Territory Governments include public order, health, education, administration, transport and maintenance of infrastructure. The revenue base of

State/Territory Governments is narrower than that of the Commonwealth and consists of taxes on property, on employers' payrolls and on provision and use of goods and services. This revenue base is supplemented by grants from the Commonwealth. Tables 27.13 and 27.14 summarise the economic transactions of the general government and public trading enterprise sectors of all State and Territory Governments combined. Table 27.15 presents consolidated outlays by purpose for all State and Territory Governments combined.

## 27.13 STATE AND TERRITORY GOVERNMENTS, General Government

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Economic transactions	\$m	\$m	\$m	\$m	\$m	\$m
Outlays						
Current outlays						
Gross expenditure on goods and services	39 670	40 962	42 596	44 395	47 299	50 405
Less sales of goods and services(a)	4 477	4 505	4 939	5 492	6 153	6 453
Final consumption expenditure	35 193	36 457	37 657	38 903	41 146	43 952
Interest payments	7 411	7 540	7 536	7 384	7 068	5 451
Subsidies to public trading enterprises	2 520	2 423	2 450	2 128	1 980	2 780
Grants to other governments	4 241	2 950	1 533	1 533	1 647	1 711
Other transfer payments	5 711	6 556	6 947	7 521	7 771	8 406
Total current outlays	55 076	55 926	56 123	57 469	59 612	62 300
Capital outlays						
Expenditure on new fixed assets	5 330	5 931	5 590	5 941	6 171	6 882
Plus expenditure on second-hand assets (net)(b)	-348	-503	-406	-214	-6 928	-710
Gross fixed capital expenditure	4 982	5 428	5 184	5 727	-757	6 172
Expenditure on land and intangible assets (net)(b)	-179	-357	-434	-489	-2 055	-93
Grants to public trading enterprises	1 752	1 935	2 051	1 909	1 885	1 523
Grants to other levels of government(b)	482	504	344	312	8 415	430
Grants to other sectors	357	330	391	294	347	451
Other capital outlays	-12	-5	22	20	29	29
Total capital outlays	7 382	7 835	7 558	7 773	7 864	8 512
Total outlays	62 458	63 761	63 681	65 242	67 476	70 812
Revenue						
Taxes, fees and fines	22 583	24 120	26 829	28 150	30 321	32 585
Interest from public trading enterprises	776	716	650	721	494	468
Interest from other enterprises	2 784	2 680	2 580	3 061	3 414	3 125
Grants for own use	23 882	26 013	25 847	26 362	27 529	27 995
Grants for onpassing	5 462	4 156	2 650	2 875	3 024	3 193
Other revenue	3 214	3 441	4 290	4 537	5 409	7 320
Total revenue	58 701	61 126	62 846	65 706	70 191	74 686
Financing and deficit measures						
Advances received (net)	-2 751	-2 674	-1 398	-2 014	-4 123	-1 004
Advances to public financial enterprises (receipts less payments)	-45	267	1 693	33	302	218
Advances to public trading enterprises (receipts less payments)	173	98	251	178	5 538	3 961
Other advances paid (receipts less payments)	-1 893	917	759	1 590	1 525	35
Borrowing (net)	11 109	8 268	4 855	333	-9 254	-8 165
Increase in provisions (net)	48	-3	-25	39	8	12
Other financing transactions (net)	-2 884	-4 238	-5 300	-623	3 289	1 069
<b>Total financing and deficit measures</b>	<b>3 757</b>	<b>2 635</b>	<b>835</b>	<b>-464</b>	<b>-2 715</b>	<b>-3 874</b>
Less increase in provisions (net)	48	-3	-25	39	8	12
Deficit (+) or surplus (-)	3 709	2 638	860	-503	-2 723	-3 886
Of which						
Current deficit(c)	-6	-141	-3 003	-5 234	-7 647	-9 792
Capital deficit(d)	3 715	2 779	3 863	4 731	4 924	5 906

(a) This item provides an indication of the extent of government charges levied. The charges (excluding inter-agency charges) are offset against gross expenditure in calculating final consumption expenditure and mainly comprise sales to the private sector. (b) Due to the transfer of roads to the local government sector in 1995-96. (c) Current outlays minus current revenues and current grants received less increase in provisions. (d) Capital outlays less capital revenues and capital grants received.

Source: Unpublished data, Government Finance Statistics.

**27.14 STATE AND TERRITORY GOVERNMENTS, Public Trading Enterprises**

	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m
Economic transactions						
Outlays						
Current outlays						
Interest payments to general government	770	717	646	727	497	468
Interest payments to other enterprises	4 659	3 978	3 441	3 376	3 379	3 044
Income transferred to general government	1 376	1 522	2 310	2 675	3 965	5 328
Other transfer payments	470	424	422	373	389	299
Total current outlays	7 275	6 641	6 819	7 151	8 230	9 139
Capital outlays						
Expenditure on new fixed assets	6 330	6 652	7 129	7 101	6 595	6 595
Plus expenditure on second-hand assets (net)	-389	-1 189	-1 381	-568	-889	-2 440
Gross fixed capital expenditure	5 941	5 463	5 748	6 533	5 706	4 155
Expenditure on land and intangible assets (net)	101	53	-265	-155	-92	562
Grants to other levels of government	0	45	52	28	10	301
Grants to other sectors	20	39	44	58	55	0
Other capital outlays	71	52	-64	-163	46	70
Total capital outlays	6 133	5 652	5 515	6 301	5 725	5 088
Total outlays	13 408	12 293	12 334	13 452	13 955	14 227
Revenue						
Sales of goods and services	32 147	33 129	39 194	41 179	41 537	38 508
Plus subsidies received	2 499	2 422	2 466	2 130	2 106	2 889
Less operating expenditure	27 754	28 573	34 006	36 426	37 185	33 886
Net operating surplus	6 892	6 978	7 654	6 883	6 458	7 511
Interest	653	457	326	452	528	588
Capital grants	1 787	1 982	2 118	1 980	1 900	2 068
Other revenue	598	545	712	908	552	500
Total revenue	9 930	9 962	10 810	10 223	9 438	10 667
Financing and deficit measures						
Advances received (net)	-134	-132	-249	-171	-5 531	-3 953
Advances to the private sector (receipts less payments)	179	157	142	141	9 968	6 943
Other advances paid (receipts less payments)	59	-113	-399	-69	34	30
Borrowing (net)	326	-1 329	-1 950	-1 527	-4 480	-1 844
Increase in provisions for depreciation	3 334	3 921	4 153	4 558	4 305	4 051
Other increase in provisions (net)	-9	-147	-405	68	816	-8
Other financing transactions (net)	-277	-26	232	229	-595	-1 659
<b>Total financing and deficit measures</b>	<b>3 478</b>	<b>2 331</b>	<b>1 524</b>	<b>3 229</b>	<b>4 517</b>	<b>3 560</b>
Less increase in provisions (net)	3 325	3 774	3 748	4 626	5 121	4 043
Deficit (+) or surplus (-)	153	-1 443	-2 224	-1 397	-604	-483
Of which						
Current deficit	-3 614	-4 591	-4 973	-4 871	-3 919	-3 041
Capital deficit	3 767	3 148	2 749	3 474	3 315	2 558

Source: Unpublished data, Government Finance Statistics.

**27.15 TOTAL OUTLAYS OF STATE AND TERRITORY GOVERNMENTS,  
Consolidated Government(a) by Purpose**

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Purpose classification	\$m	\$m	\$m	\$m	\$m	\$m
General public services	4 303	4 235	4 972	4 742	4 691	5 159
Public order and safety	4 787	4 838	4 955	5 326	5 794	6 522
Education						
Primary and secondary	10 906	11 204	11 363	11 665	12 345	13 269
University	3 163	1 825	231	189	195	218
Technical and further education	2 033	2 209	2 255	2 337	2 406	2 520
Other education	1 649	1 774	1 724	1 814	1 912	2 010
<i>Total education</i>	<i>17 751</i>	<i>17 012</i>	<i>15 573</i>	<i>16 005</i>	<i>16 858</i>	<i>18 017</i>
Health						
Hospital and other institutional services	9 882	10 357	10 566	10 792	11 334	11 902
Community health services	806	929	939	1 300	1 612	1 910
Other health	813	718	732	876	921	939
<i>Total health</i>	<i>11 501</i>	<i>12 004</i>	<i>12 237</i>	<i>12 968</i>	<i>13 867</i>	<i>14 751</i>
Social security and welfare						
Welfare services	2 292	2 435	2 549	2 692	2 899	3 114
Other social security and welfare	587	585	702	767	767	840
<i>Total social security and welfare</i>	<i>2 879</i>	<i>3 020</i>	<i>3 251</i>	<i>3 459</i>	<i>3 666</i>	<i>3 954</i>
Housing and community amenities						
Housing and community development	1 580	1 737	1 425	2 009	1 684	1 380
Water supply	750	663	558	603	487	982
Sanitation and protection of the environment	1 077	1 052	966	1 203	1 101	912
Other community amenities	31	56	15	25	67	7
<i>Total housing and community amenities</i>	<i>3 438</i>	<i>3 508</i>	<i>2 964</i>	<i>3 840</i>	<i>3 339</i>	<i>3 281</i>
Recreation and culture						
Recreational facilities and services	1 186	1 193	1 018	739	1 171	1 665
Cultural facilities and services	536	557	615	774	797	807
Broadcasting and film production	9	10	12	15	15	27
<i>Total recreation and culture</i>	<i>1 731</i>	<i>1 760</i>	<i>1 645</i>	<i>1 528</i>	<i>1 983</i>	<i>2 499</i>
Fuel and energy	2 476	1 636	1 421	2 661	2 511	1 835
Agriculture, forestry, fishing and hunting	1 433	1 561	1 440	1 212	1 549	1 545
Mining, manufacturing and construction	289	113	259	319	317	292
Transport and communications						
Road transport	4 061	4 764	4 537	4 577	5 052	5 149
Water transport	212	208	347	220	156	113
Rail and multi-mode transport	2 427	2 622	3 334	3 001	3 140	3 680
Communications and other transport	22	16	6	14	43	2
<i>Total transport and communications</i>	<i>6 722</i>	<i>7 610</i>	<i>8 224</i>	<i>7 812</i>	<i>8 391</i>	<i>8 944</i>
Other economic affairs	1 269	1 890	1 843	1 785	1 384	1 437
Other purposes						
Public debt	12 147	11 323	10 832	10 536	10 187	8 328
Other	1 069	1 157	1 241	1 105	934	1 004
<i>Total other purposes</i>	<i>13 216</i>	<i>12 480</i>	<i>12 073</i>	<i>11 641</i>	<i>11 121</i>	<i>9 332</i>
<b>Total</b>	<b>71 794</b>	<b>71 668</b>	<b>70 857</b>	<b>73 298</b>	<b>75 472</b>	<b>77 569</b>

(a) Total outlays by purpose contain estimated data for the ACT.

Source: *Unpublished data, Government Finance Statistics.*

## Local government finance

Local government authorities govern areas typically described as cities, towns, shires, boroughs, municipalities and district councils. Although the range of functions undertaken by local governments varies between the different jurisdictions, their powers and responsibilities are generally similar and cover such matters as:

- the construction and maintenance of roads, streets and bridges;
- water, sewerage and drainage systems;
- health and sanitary services;
- the regulation of building standards; and
- the administration of regulations relating to items such as slaughtering, weights and measures, and registration of dogs.

Local governments also provide transport facilities, hospitals, charitable institutions, recreation grounds, parks, swimming pools, libraries, museums and other business undertakings.

Local governments' own-source revenue is derived mainly from property taxes. They also rely on grants from the Commonwealth and their parent State/Territory Governments (except for the Australian Capital Territory, which has no separate local government).

Table 27.16 shows consolidated outlays of local governments classified by purpose. Tables 27.17 and 27.18 show the economic transactions and outlays for the general government and public trading enterprise activities of all local governments in Australia.

**27.16 TOTAL OUTLAYS OF LOCAL GOVERNMENTS, Consolidated Government by Purpose**

	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
Purpose classification	\$m	\$m	\$m	\$m	\$m	\$m
General public services	1 552	1 495	1 479	1 447	1 457	1 401
Public order and safety	120	127	178	212	255	278
Education	38	45	31	34	35	38
Health	162	157	174	187	193	208
Social security and welfare	358	409	451	485	560	610
Housing and community amenities						
Housing and community development	203	221	238	272	324	333
Water supply	195	221	228	215	184	153
Sanitation and protection of the environment	626	681	648	742	1 059	1 080
Other community amenities	239	311	267	293	294	321
Total housing and community amenities	1 263	1 434	1 381	1 522	1 861	1 887
Recreation and culture						
Recreational facilities and services	860	1 069	1 067	1 135	1 151	1 179
Cultural facilities and services	284	269	364	421	506	578
Total recreation and culture	1 144	1 338	1 431	1 556	1 657	1 757
Fuel and energy(a)	324	393	25	4	-543	-65
Agriculture, forestry, fishing and hunting	17	16	12	13	15	14
Mining, manufacturing and construction	115	112	96	128	104	110
Transport and communications(b)	1 944	2 116	2 050	1 958	10 217	2 394
Other economic affairs	64	73	71	8	71	96
Other purposes	1 028	1 015	673	613	641	686
<b>Total</b>	<b>8 128</b>	<b>8 729</b>	<b>8 051</b>	<b>8 168</b>	<b>16 522</b>	<b>9 414</b>

(a) Negative outlays in this category in 1995–96 are due to electricity asset sales during that year. (b) The large outlay in 1995–96 figure is due to the transfer of roads from the State Government sector to local government sector.

Source: Unpublished data, Government Finance Statistics.

## 27.17 LOCAL GOVERNMENTS, General Government

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Economic transactions	\$m	\$m	\$m	\$m	\$m	\$m
Outlays						
Current outlays						
Gross expenditure on goods and services	6 655	7 002	7 345	7 489	7 991	8 322
Less sales of goods and services(a)	2 274	2 407	2 739	2 795	2 437	2 501
Final consumption expenditure	4 381	4 595	4 606	4 694	5 554	5 821
Interest payments	598	541	421	375	375	363
Other transfer payments	94	80	81	96	97	105
Total current outlays	5 073	5 216	5 108	5 165	6 026	6 289
Capital outlays						
Expenditure on new fixed assets	2 188	2 600	2 501	2 592	2 747	2 983
Plus expenditure on second-hand assets (net)(b)	-223	-309	-298	-360	5 726	-459
Gross fixed capital expenditure	1 965	2 291	2 203	2 232	8 473	2 524
Expenditure on land and intangible assets (net)	66	84	61	93	1 848	-15
Grants to other levels of government	2	29	0	10	7	3
Other capital outlays	7	0	6	-2	0	1
Total capital outlays	2 040	2 404	2 270	2 333	10 328	2 513
Total outlays	7 113	7 620	7 378	7 498	16 354	8 802
Revenue						
Taxes, fees and fines	4 703	4 968	5 145	5 261	5 515	5 824
Interest received	444	366	332	352	410	377
Grants received(b)	1 645	2 083	1 915	1 870	10 002	2 090
Other revenue	206	142	381	395	584	545
Total revenue	6 998	7 559	7 773	7 878	16 511	8 836
Financing and deficit measures						
Advances received (net)	14	-2	6	9	-36	-25
Advances paid (receipts less payments)	16	14	11	21	529	-2
Borrowing (net)	39	-129	-178	-218	-395	-53
Other financing transactions (net)	46	178	-234	-192	-255	46
<b>Total financing and deficit measures</b>	<b>115</b>	<b>61</b>	<b>-395</b>	<b>-380</b>	<b>-157</b>	<b>-34</b>
Equals deficit or surplus (-)	115	61	-395	-380	-157	-34
of which						
Current deficit(c)	-1 578	-1 683	-2 021	-2 105	-1 743	-1 811
Capital deficit(d)	1 693	1 744	1 626	1 725	1 586	1 777

(a) This item provides an indication of the extent of government charges levied. The charges (excluding inter-agency charges) are offset against gross expenditure in calculating final consumption expenditure and mainly comprise sales to the private sector.

(b) Due to the transfer of roads from the State Government sector in 1995-96. (c) Current outlays minus current revenues and current grants received less increase in provisions. (d) Capital outlays less capital revenues and capital grants received.

Source: Unpublished data, Government Finance Statistics.



## 27.18 LOCAL GOVERNMENTS, Public Trading Enterprises

	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m
Economic transactions						
Outlays						
Current outlays						
Interest payments	320	291	220	204	197	205
Income transferred to general government	32	11	6	8	0	1
Other transfer payments	-8	55	0	0	0	-1
Total current outlays	344	357	226	212	197	205
Capital outlays						
Expenditure on new fixed assets	744	729	468	495	514	482
Plus expenditure on second-hand assets (net)	-41	-29	-5	-9	-13	-76
Gross fixed capital expenditure	703	700	463	486	501	406
Expenditure on land and intangible assets (net)	11	4	2	0	0	0
Other capital outlays	9	78	0	0	0	-1
Total capital outlays	723	782	465	486	501	405
Total outlays	1 067	1 139	691	698	698	610
Revenue						
Sales of goods and services	4 097	4 268	1 904	1 526	1 554	1 627
Plus subsidies received	40	38	32	34	33	35
Less operating expenditure	3 578	3 760	1 356	1 010	1 122	1 223
Net operating surplus	559	546	580	550	465	439
Interest received	83	53	30	36	30	32
Capital grants received	87	80	87	89	102	97
Other revenue	174	197	193	197	224	244
Total revenue	903	876	890	872	821	812
Financing and deficit measures						
Advances received (net)	-34	-19	0	-1	0	-2
Borrowing (net)	-28	-54	-155	-105	-116	-134
Increase in provisions for depreciation	298	374	102	103	212	280
Other increase in provisions (net)	0	0	0	0	0	-1
Other financing transactions (net)	-72	-38	-146	-171	-219	-345
<b>Total financing and deficit measures</b>	<b>164</b>	<b>263</b>	<b>-199</b>	<b>-174</b>	<b>-123</b>	<b>-202</b>
Less increase in provisions (net)	298	374	102	103	212	279
Deficit (+) or surplus (-)	-134	-111	-301	-277	-335	-481
of which						
Current deficit	-596	-616	-499	-492	-525	-560
Capital deficit	462	505	198	215	190	79

Source: Unpublished data, Government Finance Statistics.

## Financial assets and liabilities

As well as providing transactions (flows) statistics, the GFS system provides levels (stocks) data on financial assets and liabilities of the Australian non-financial public sector. The statistics encompass deposits made or held by Australian governments, and all lending and borrowing they have undertaken, whether for policy purposes (termed 'advances') or for liquidity management and investment (other lending/borrowing). Briefly defined:

- Financial assets cover the financial claims of the non-financial public sector on other organisations (including other government authorities and overseas organisations) and households. However, the financial assets

shown below cover only 'debt-related' financial assets and do not include shares and other equity assets and financial assets related to trade credit and accounts receivable. Financial assets are shown before deduction of provisions for doubtful debts.

- Liabilities include all financial claims on the non-financial public sector except those related to trade credit and other accounts payable. Liabilities include lease liabilities under finance leases or similar arrangements and repayable amounts held as security deposits. Monies held on trust (excluding employee superannuation contributions) are included both as assets and liabilities of government. Coin on issue is not included as a liability of government.

Table 27.19 summarises the financial assets, liabilities and net financial position of the

non-financial public sector of the three levels of government.

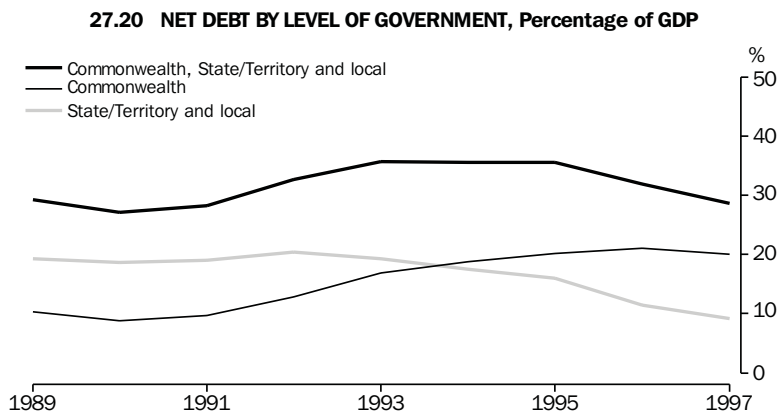
**27.19 FINANCIAL ASSETS AND LIABILITIES OF THE COMMONWEALTH, STATE, TERRITORY AND LOCAL GOVERNMENTS—As at 30 June**

	1992	1993	1994	1995	1996	1997
	\$m	\$m	\$m	\$m	\$m	\$m
<b>COMMONWEALTH GOVERNMENT</b>						
General government						
Gross debt	59 874	79 401	94 090	107 501	115 374	114 024
Total cash, deposits and lending	28 742	24 183	24 221	24 010	19 543	19 619
Net debt	31 132	55 218	69 869	83 492	95 831	94 404
Unfunded employee entitlements	n.a.	60 270	69 187	67 464	67 352	68 308
Public trading enterprises						
Gross debt	24 134	18 825	15 920	15 572	11 293	12 784
Total cash, deposits and lending	5 444	5 093	4 830	6 074	3 545	3 512
Net debt	18 690	13 732	11 090	9 498	7 748	9 273
Unfunded employee entitlements	n.a.	770	707	695	685	567
Consolidated government						
Gross debt	80 077	96 074	108 275	121 544	126 551	126 703
Total cash, deposits and lending	30 255	27 124	27 315	28 555	22 971	23 026
Net debt	49 822	68 950	80 959	92 989	103 579	103 677
Unfunded employee entitlements	n.a.	61 040	69 894	68 159	68 037	68 875
<b>STATE AND TERRITORY GOVERNMENTS</b>						
General government						
Gross debt	67 706	76 073	79 888	76 920	63 714	57 967
Total cash, deposits and lending	33 066	39 569	42 466	42 073	40 100	40 587
Net debt	34 639	36 503	37 422	34 847	23 614	17 379
Unfunded employee entitlements	41 356	50 903	47 769	50 757	55 100	55 621
Public trading enterprises						
Gross debt	47 431	46 474	43 611	43 960	39 588	38 227
Total cash, deposits and lending	7 110	7 310	6 964	6 970	7 200	8 453
Net debt	40 321	39 164	36 647	36 990	32 388	29 774
Unfunded employee entitlements	8 260	6 585	6 317	6 474	5 742	4 054
Consolidated government						
Gross debt	105 416	111 087	111 614	110 313	93 947	87 606
Total cash, deposits and lending	30 458	35 422	37 546	38 474	37 946	40 453
Net debt	74 958	75 666	74 068	71 838	58 001	47 153
Unfunded employee entitlements	49 617	57 488	54 086	57 231	60 841	59 675
<b>LOCAL GOVERNMENTS</b>						
Consolidated government						
Gross debt	7 988	7 512	6 810	6 474	6 092	6 025
Total cash, deposits and lending	3 460	4 318	4 986	4 895	5 870	5 584
Net debt	4 528	3 193	1 824	1 579	223	441
Unfunded employee entitlements	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<b>STATE, TERRITORY AND LOCAL GOVERNMENTS</b>						
Consolidated government						
Gross debt	113 050	117 427	117 958	115 885	99 221	92 765
Total cash, deposits and lending	33 564	38 868	42 066	42 467	42 997	45 171
Net debt	79 486	78 559	75 892	73 418	56 224	47 594
Unfunded employee entitlements	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<b>COMMONWEALTH, STATE, TERRITORY AND LOCAL GOVERNMENTS</b>						
Consolidated government						
Gross debt	170 287	190 654	204 527	217 631	211 184	208 835
Total cash, deposits and lending	43 226	44 864	50 353	53 786	54 238	60 456
Net debt	127 061	145 790	154 174	163 845	156 947	148 379
Unfunded employee entitlements	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Public Sector Financial Assets and Liabilities, Australia (5513.0).

Graph 27.20 shows the movements in net debt as a percentage of GDP(I) for the Commonwealth Government; State/Territory Governments and local governments combined; and all governments combined, from 30 June 1989 to 30 June 1997. Over this period,

Commonwealth net debt has increased as a percentage of GDP, but State/Territory and local government net debt has decreased substantially, leading to a decrease in total government net debt as a percentage of GDP.



Source: *Public Sector Financial Assets and Liabilities, Australia (5513.0)*.

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## Introduction

**P**rices are a key factor in the operation of an economy. Price indexes, which provide summary measures of the movements in various categories of prices, are used extensively to analyse and monitor price behaviour, and to adjust government payments such as pensions.

This chapter provides an outline of the major price indexes, their history, and their underlying concepts and methodology. More detailed information is contained in the source publications referred to throughout the chapter and in the bibliography.

## Consumer Price Index (CPI)

The description of the CPI commonly adopted by users is in terms of its perceived uses; hence the frequent references to the CPI as a measure of inflation, a measure of changes in purchasing power, or a measure of changes in the cost of living. In practice, the CPI is a measure of changes, over time, in prices of a constant basket of goods and services acquired by metropolitan households in Australia. As such, the CPI has been designed as a general measure of price inflation for the household sector in Australia.

The simplest way of thinking about the CPI is to imagine a basket of goods and services of the kind acquired by Australian households. As prices vary, the total price of this basket will also vary. The CPI is simply a measure of the changes in the price of this basket as the prices of items in it change.

The price of the CPI basket in the base period is assigned a value of 100.0 and the prices in other periods are expressed as percentages of the price in the base period. For example, if the price of the basket had increased 35% since the base year, then the index would read 135.0. Similarly, if the price had fallen by 5% since the base year, the index would stand at 95.0.

For practical reasons, the CPI basket cannot include every item bought by households, but it does include all the important kinds of items. It is not necessary to include every item that people buy since many related items are subject to similar price changes. The idea is to select representative items so that the index reflects price changes for a much wider range of goods and services than is actually priced.

The total basket is divided into the following eight major commodity groups: food; clothing; housing; household equipment and operation; transportation; tobacco and alcohol; health and personal care; and recreation and education.

These groups are divided in turn into 33 subgroups, and the subgroups into 101 expenditure classes. These numbers apply to CPIs calculated and published from the September quarter 1998 onwards. For more information see the article *Outcomes of the 13th Series Australian Consumer Price Index Review* at the end of this section.

In addition to the aggregate All groups index, indexes are also compiled and published for each of the groups, subgroups and expenditure classes for each State capital city, Darwin and Canberra. National indexes are constructed as the weighted average of the indexes compiled for each of the eight capital cities.

The CPI is the latest of a number of retail price indexes which have been constructed for various purposes by the ABS. The history of retail price indexes in Australia is published in *Year Book Australia, 1995*.

## Index population

The CPI measures price changes relating to the spending pattern of metropolitan private households. This group is termed the CPI population group. 'Metropolitan' is defined as the State capital cities, together with Darwin and Canberra.

This population group differs from that applying to CPIs calculated and published prior to the September quarter 1998. For more information see the article *Outcomes of the 13th Series Australian Consumer Price Index Review* at the end of this section.

## Conceptual basis

The CPI is a quarterly measure of the change in average price levels. It provides a method of comparing the average price level for a quarter with the average price level of the reference base year or changes in the average price level from one quarter to any other quarter.

In measuring price changes, the CPI aims to measure only pure price changes (i.e. it is concerned with isolating and measuring only that element of price change which is not brought about by any change to either the quantity or the quality of the goods or services concerned). In other words it aims to measure,

each quarter, the change in the cost of acquiring an identical basket of goods and services. This involves evaluating changes in the quality of goods and services included in the index and removing the effects of such changes from the prices used to construct the index.

The CPI is also a measure of changes in the prices actually paid by consumers for the goods and services they buy. It is not concerned with nominal, recommended or list prices (unless they are the prices consumers actually pay).

The CPI basket includes goods and services ranging from steak to motor cars and from dental fillings to restaurant meals. The items are chosen not only because they represent the spending habits of the CPI population group, but also because the items are those for which the prices can be associated with identifiable and specific commodities and services. While government taxes and charges which are associated with the use of specific goods and services (such as excise duty, sales taxes, local government rates, etc.) are included, income taxes and the income-related Medicare levy are excluded because they cannot be clearly associated with the purchase or use of a specific quantity of any good or service.

Items are not excluded from the CPI basket on the basis of moral or social judgements. For example, some people may regard the use of tobacco and alcohol as socially undesirable, but these commodities are included in the CPI basket because they are significant items of household expenditure and their prices can be accurately measured. However, to assist in understanding the effect that major item groups have on the CPI, the ABS publishes a range of supplementary indexes which exclude, in turn, each of the eight major commodity groups. These supplementary indexes can also be used in their own right for evaluating price changes or for indexation purposes.

### Periodic reviews of the CPI

Like any other long-standing and important statistical series, the CPI is reviewed from time to time to ensure that it continues to be relevant to current conditions. Over time, household spending habits change, as does the range of

available goods and services. The CPI needs to be updated to take account of these changes. These reviews also provide an opportunity to reassess the scope and coverage of the index and other methodological issues.

Since its inception in its current form in 1960, reviews of the CPI have usually been carried out at about five-yearly intervals. Following each review, which involves revising the list of items and their weights, the new series are linked to the old to form continuous series. This linking is carried out in such a way that the resulting continuous series reflects only price changes and not differences in the prices of the old and new baskets.

The current (13th series) CPI reflects expenditure patterns derived mainly from the 1993–94 Household Expenditure Survey and has a reference base of 1989–90. It was introduced in the September quarter 1998.

In addition to revising weights to reflect new expenditure patterns, the 13th Series CPI review, conducted in 1997, also considered a number of conceptual and methodological issues, including the principal purpose, the population coverage and frequency of the CPI. For more information see the article at the end of this section, as well as *Information Paper: Outcome of the 13th Series Australian Consumer Price Index Review* (6453.0), and *Information Paper: Introduction of the 13th Series Australian Consumer Price Index* (6454.0).

Subsequent to the changes to the CPI announced by the ABS, the Reserve Bank of Australia announced, in the Reserve Bank Bulletin of 19 October 1998, that in future “the target for monetary policy can now be presented simply as maintaining an average rate of inflation, as measured by the CPI, of 2 to 3 per cent over the medium term”.

### Weighting pattern

Between periodic reviews of the CPI, each of the groups, subgroups and expenditure classes has a fixed weight (i.e. the measure of its relative importance). Details of the weighting pattern for the current (13th series) CPI are shown in table 28.1 for groups and subgroups.



### 28.1 CONSUMER PRICE INDEX, Weighted Average of Capital Cities(a)(b)

Groups and subgroups	Weight in CPI basket
<b>Food</b>	
Dairy and related products	1.47
Cereal products	2.44
Meat and seafoods	2.83
Fresh fruit and vegetables	2.27
Processed fruit and vegetables	0.75
Soft drinks, ice cream and confectionery	2.42
Meals out and take away foods	5.25
Other food	1.75
<i>Total</i>	19.19
<b>Clothing</b>	
Men's clothing	1.19
Women's clothing	2.35
Children's and infants clothing	0.53
Footwear	0.87
Clothing accessories, supplies and services	0.78
<i>Total</i>	5.72
<b>Housing</b>	
Rents	5.80
Utilities	3.56
Other housing	9.99
<i>Total</i>	19.35
<b>Household equipment and operation</b>	
Furniture and floor coverings	3.58
Household textiles	0.49
Household appliances, utensils and tools	2.77
Household supplies	2.46
Household services	1.23
Postal and communication services	2.03
<i>Total</i>	12.56
<b>Transportation</b>	
Private motoring	13.22
Urban transport fares	0.91
<i>Total</i>	14.13
<b>Tobacco and alcohol</b>	
Alcoholic drinks	5.06
Cigarettes and tobacco	3.08
<i>Total</i>	8.14
<b>Health and personal care</b>	
Health services	3.80
Personal care products	2.41
Hairdressing and personal care services	0.76
<i>Total</i>	6.98
<b>Recreation and education</b>	
Books, newspapers, magazines and stationery	1.91
Recreation	5.80
Holiday travel and accommodation	3.89
Education and child care	2.32
<i>Total</i>	13.93
<b>Total All groups</b>	<b>100.00</b>

(a) Percentages may not add due to rounding. (b) Weights shown are those applicable from the September quarter 1998 onwards.

Source: Information Paper: Introduction of the 13th Series Australian Consumer Price Index (6454.0).

### Price collection

Since the CPI is designed to measure the impact of changing prices on metropolitan private households, information about prices is collected in the kinds of retail outlets or other places where these households normally purchase goods and services. Prices are collected from many sources, including supermarkets, department stores, footwear stores, restaurants, motor vehicle dealers and service stations, dental surgeries, hotels and clubs, schools, hairdressers, travel agents and airlines, bus operators, electricians and plumbers. Items like rail fares, electricity and gas charges, telephone charges and local government rates are collected from the authorities concerned. Information on rents is obtained from property management companies and from government housing commissions. In total, around 100,000 separate price quotations are collected each quarter.

The collection of prices in each capital city is carried out by trained ABS field staff.

The prices used in the CPI are those that any member of the public would have to pay to purchase the specified good or service, including any associated sales or excise taxes. Sale prices, discount prices and 'specials' are reflected in the CPI so long as the items concerned are of normal quality (that is, not damaged or shop-soiled), and are offered for sale in reasonable quantities. To ensure that the price movements reflect the buying experience of the bulk of the metropolitan population, the brands and the varieties of the items which are priced are generally those which sell in greatest volume.

### Price movements by city

Table 28.2 presents All groups index numbers for each of the eight capital cities and for the weighted average of the eight capital cities, together with percentage changes.

The capital city indexes measure price movements over time in each city individually. They do not measure differences in price levels between cities. For example, the index for Adelaide in 1997–98 of 121.6 compared with the corresponding index for Sydney of 120.5 does not mean that prices in Adelaide are higher than those in Sydney. It simply means that, since the base period (1989–90), prices in Adelaide have increased by a greater percentage than those in Sydney (21.6% compared with 20.5%).

**28.2 CONSUMER PRICE INDEX, All Groups Index Numbers(a)(b)**

Year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Canberra	Darwin	Weighted average of eight capital cities
INDEX NO.(c)									
1991-92	106.7	108.1	107.0	108.9	105.9	107.1	107.8	108.0	<b>107.3</b>
1992-93	107.7	108.9	108.5	111.2	106.2	108.5	109.5	109.5	<b>108.4</b>
1993-94	109.2	111.1	110.6	113.4	108.5	111.7	111.4	111.5	<b>110.4</b>
1994-95	113.0	114.1	114.7	116.9	112.3	115.2	115.1	114.7	<b>113.9</b>
1995-96	118.7	118.4	119.1	121.2	116.7	119.6	120.3	119.5	<b>118.7</b>
1996-97	120.4	119.9	121.0	122.3	118.3	121.4	121.2	121.6	<b>120.3</b>
1997-98	120.5	119.8	121.6	121.6	118	121.3	120.4	121.3	<b>120.3</b>
CHANGE FROM PREVIOUS YEAR (%)									
1991-92	1.7	2.2	2.0	2.5	0.8	2.1	2.6	2.2	<b>1.9</b>
1992-93	0.9	0.7	1.4	2.1	0.3	1.3	1.6	1.4	<b>1.0</b>
1993-94	1.4	2.0	1.9	2.0	2.2	2.9	1.7	1.8	<b>1.8</b>
1994-95	3.5	2.7	3.7	3.1	3.5	3.1	3.3	2.9	<b>3.2</b>
1995-96	5.0	3.8	3.8	3.7	3.9	3.8	4.5	4.2	<b>4.2</b>
1996-97	1.4	1.3	1.6	0.9	1.4	1.5	0.7	1.8	<b>1.3</b>
1997-98	0.1	-0.1	0.5	-0.6	-0.3	-0.1	-0.7	-0.2	<b>0.0</b>

(a) Reference base year 1989-90 = 100.0. (b) The separate city indexes measure price movements within each city individually. They do not compare price levels between cities. (c) Index numbers for financial years are calculated as the simple arithmetic averages of the quarterly index numbers.

Source: Consumer Price Index, Australia (6401.0).

**28.3 CONSUMER PRICE INDEX, Group Index Numbers—Weighted Average of Capital Cities(a)**

Year	Food	Clothing	Housing	Household equipment and operation	Transportation	Tobacco and alcohol	Health and personal care	Recreation and education	All groups
INDEX NO.(b)									
1991-92	105.8	106.4	98.9	107.5	108.8	115.0	121.3	106.9	107.3
1992-93	107.4	107.5	94.6	107.3	111.3	124.4	124.0	109.1	108.4
1993-94	109.4	106.7	94.2	107.8	113.8	133.7	129.0	111.9	110.4
1994-95	112.1	106.7	100.0	109.2	117.5	141.0	135.5	114.6	113.9
1995-96	116.0	107.0	105.9	111.7	122.6	156.1	141.8	117.7	118.7
1996-97	119.7	107.3	101.6	113.5	124.3	161.4	149.1	119.7	120.3
1997-98	121.8	107.4	94.5	113.8	123.5	164.6	153.6	123.6	120.3
CHANGE FROM PREVIOUS YEAR (%)									
1991-92	2.4	1.7	-4.4	2.3	1.8	5.7	10.7	1.8	1.9
1992-93	1.5	1.0	-4.3	-0.2	2.3	8.2	2.2	2.1	1.0
1993-94	1.9	-0.7	-0.4	0.5	2.2	7.5	4.0	2.6	1.8
1994-95	2.5	0	6.2	1.3	3.3	5.5	5.0	2.4	3.2
1995-96	3.5	0.3	5.9	2.3	4.3	10.7	4.6	2.7	4.2
1996-97	3.2	0.3	-4.1	1.6	1.4	3.4	5.1	1.7	1.3
1997-98	1.8	0.1	-7.0	0.3	-0.6	2.0	3.0	3.3	0

(a) Reference base year 1989-90 = 100.0. (b) Index numbers for financial years are calculated as the simple arithmetic averages of the quarterly index numbers.

Source: Consumer Price Index, Australia (6401.0).

## Price movements by broad commodity group

Table 28.3 presents, for the weighted average of the eight capital cities, index numbers for each of the eight major commodity groups and for the All groups, together with percentage changes.

## Long-term price series

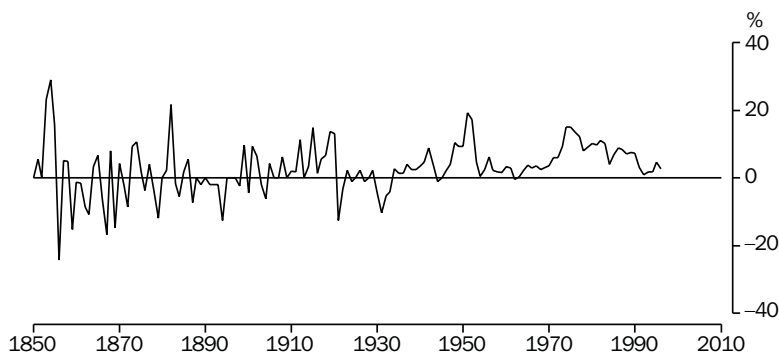
Although the CPI has only been compiled from 1948, an approximate long-term measure of retail price change has been constructed by linking together other selected retail price index series (see graph 28.4 and table 28.5). The index numbers are expressed on a reference base 1945 = 100.0, which was the end of a period of

relative price stability during World War II. The successive series linked together to produce this long-term series of index numbers are:

- from 1850 to 1901, Sydney Retail Price Index;
- from 1901 to 1914, the A Series Index;
- from 1914 to 1946–47, the C Series Index;
- from 1946–47 to 1948–49, a combination of the C Series Index (excluding rent) and the housing group of the CPI; and
- from 1948–49 onwards, the CPI.

For more information about these series see *Year Book Australia, 1995* (1301.0).

**28.4 RETAIL PRICE INDEX, Percentage Change from Previous Year**



Source: Unpublished data, Consumer Price Index.

## 28.5 RETAIL PRICE INDEX NUMBERS(a)(b)

Year	Index no.	Year	Index no.	Year	Index no.	Year	Index no.	Year	Index no.	Year	Index no.
1850	53	1875	53	1900	43	1925	88	1950	140	1975	510
1851	56	1876	51	1901	47	1926	90	1951	167	1976	579
1852	56	1877	53	1902	50	1927	89	1952	196	1977	650
1853	69	1878	51	1903	49	1928	89	1953	205	1978	702
1854	89	1879	45	1904	46	1929	91	1954	206	1979	766
1855	103	1880	45	1905	48	1930	87	1955	211	1980	844
1856	78	1881	46	1906	48	1931	78	1956	224	1981	926
1857	82	1882	56	1907	48	1932	74	1957	229	1982	1 028
1858	86	1883	55	1908	51	1933	71	1958	233	1983	1 132
1859	73	1884	52	1909	51	1934	73	1959	237	1984	1 177
1860	72	1885	53	1910	52	1935	74	1960	245	1985	1 257
1861	71	1886	56	1911	53	1936	75	1961	252	1986	1 370
1862	65	1887	52	1912	59	1937	78	1962	251	1987	1 487
1863	58	1888	52	1913	59	1938	80	1963	252	1988	1 594
1864	60	1889	51	1914	61	1939	82	1964	258	1989	1 714
1865	64	1890	51	1915	70	1940	85	1965	268	1990	1 839
1866	60	1891	50	1916	71	1941	89	1966	276	1991	1 898
1867	50	1892	49	1917	75	1942	97	1967	286	1992	1 917
1868	54	1893	48	1918	80	1943	101	1968	293	1993	1 952
1869	46	1894	42	1919	91	1944	100	1969	302	1994	1 989
1870	48	1895	42	1920	103	1945	100	1970	313	1995	2 082
1871	47	1896	42	1921	90	1946	102	1971	332	1996	2 136
1872	43	1897	42	1922	87	1947	106	1972	352	1997	2 141
1873	47	1898	41	1923	89	1948	117	1973	385	..	..
1874	52	1899	45	1924	88	1949	128	1974	443	..	..

(a) Reference base year 1945 = 100.0. (b) The index numbers relate to Sydney from 1850 to 1900; from 1901 to 1980 they relate to the weighted average of six State capital cities and from 1981 to the weighted average of eight capital cities. Index numbers are for calendar years.

Source: Unpublished data, Consumer Price Index.

## International comparisons

In analysing price movements in Australia, an important consideration is Australia's performance relative to other countries. However, due to the many differences in the structure of the housing sector in different countries and in the way that housing is treated in their CPIs, a simple comparison of All groups (or headline) CPIs is often inappropriate. In order to provide a better basis for international

comparisons, the Fourteenth International Conference of Labour Statisticians adopted a resolution which called for countries to "provide for dissemination at the international level of an index which excludes shelter, in addition to the all items index".

Table 28.6 presents indexes for selected countries on a basis consistent with the above resolution and comparable with the Australian series 'All groups excluding housing'.

**28.6 CONSUMER PRICE INDEX, International Comparisons(a)(b)**

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
INDEX NO.							
<b>Australia</b>	<b>108.8</b>	<b>111.0</b>	<b>113.5</b>	<b>116.5</b>	<b>121.1</b>	<b>123.9</b>	<b>125.4</b>
New Zealand(c)	106.5	108.7	109.4	110.5	111.9	113.7	114.9
Hong Kong	121.7	130.8	140.1	151.4	160.8	168.2	175.1
Indonesia	120.0	129.0	137.8	150.3	163.7	174.1	232.7
Japan	105.9	106.8	107.9	107.8	107.3	108.2	112.4
Republic of Korea	117.9	123.5	130.4	138.0	144.4	151.3	162.1
Singapore	106.1	108.1	110.9	114.5	116.0	118.1	119.4
Taiwan	107.6	111.4	114.2	119.1	122.5	125.7	127.0
Canada	108.8	110.8	112.0	113.4	116.0	118.8	120.6
United States of America	108.7	112.1	114.8	118.0	120.9	124.3	125.8
Germany(d)	107.1	110.3	113.2	115.2	116.3	117.7	119.2
United Kingdom	115.0	118.6	122.0	124.8	128.3	131.5	134.6
CHANGE SINCE PREVIOUS YEAR (%)							
<b>Australia</b>	<b>3.0</b>	<b>2.0</b>	<b>2.3</b>	<b>2.6</b>	<b>3.9</b>	<b>2.3</b>	<b>1.2</b>
New Zealand(c)	2.4	2.1	0.6	1.0	1.3	1.6	1.1
Hong Kong	9.8	7.5	7.1	8.1	6.2	4.6	4.1
Indonesia	10.4	7.5	6.8	9.1	8.9	6.4	33.7
Japan	2.4	0.8	1.0	-0.1	-0.5	0.8	3.9
Republic of Korea	8.1	4.7	5.6	5.8	4.6	4.8	7.1
Singapore	2.7	1.9	2.6	3.2	1.3	1.8	1.2
Taiwan	3.5	3.5	2.5	4.3	2.9	2.6	1.0
Canada	3.1	1.8	1.1	1.3	2.3	2.4	1.5
United States of America	3.0	3.1	2.4	2.8	2.5	2.8	1.2
Germany(c)	4.3	3.0	2.6	1.8	1.0	1.2	1.3
United Kingdom	6.8	3.1	2.9	2.3	2.8	2.5	2.4

(a) Reference base year 1989-90 = 100.0. (b) All groups excluding housing. (c) From March quarter 1994, the statistics for New Zealand refer to 'all groups excluding housing and credit services'. (d) The statistics for Germany refer to Western Germany (Federal Republic of Germany before the unification of Germany).

Source: Consumer Price Index (6401.0).

## Outcomes of the 13th Series Australian Consumer Price Index Review

### Background

To ensure that the CPI continues to meet community needs, the ABS reviews the CPI at about five-yearly intervals. These reviews update item weights and provide an opportunity to reassess the scope and coverage of the index and other methodological issues.

The most recent review was undertaken in 1997. A 13th Series CPI Advisory Group, which included representatives from Commonwealth and State government departments, the business community, academia and community organisations, assisted the ABS in the review.

### Issues

To begin the review, the Information Paper *Issues To Be Considered During The 13th Series Australian Consumer Price Index Review* (6451.0) was made available by the ABS in May 1997 to highlight and provide background on the particular areas that would be considered during the review.

The issues covered included:

- the purpose of the CPI;
- the frequency of its calculation and publication;
- population coverage;
- classification of commodities, including specifically the creation of a new commodity group to cover financial services;
- item coverage;
- the demand for and relevance of analytical series such as State and Local Government Charges and Imported vs Domestic Goods; and
- the demand for spatial price indexes which compare price levels between regions rather than between time periods.

### Outcomes

In November 1997, the decisions taken in the review were published in the Information Paper *Outcome of the 13th Series Australian Consumer Price Index Review* (6453.0). The

majority of the changes made as a result of the review were incorporated into the September quarter 1998 CPI.

A summary of the main outcomes is outlined below.

### Principal purpose and population coverage

The most important finding of the 13th Series CPI Review was that the context in which the CPI is used has changed:

- Containing inflation, and the shaping of inflationary expectations of the Australian population, is attracting much more focus as an economic policy imperative.
- Since 1993, the Reserve Bank of Australia has administered monetary policy with the objective of keeping underlying inflation between 2 and 3 per cent, on average, over the cycle. (Subsequent to the Statistician announcing the decisions taken on the 13th Series CPI, the Reserve Bank has advised that it will henceforth administer monetary policy with the objective of maintaining an average rate of inflation, as measured by the CPI, of 2 to 3 per cent over the medium term.)
- There has been a continuing trend towards decentralised, enterprise level wage and salary setting arrangements with the outcomes focused on the commercial circumstances of individual businesses. From employees' perspectives, these arrangements have focused attention on more forward looking inflationary expectations rather than on past 'catch-up' approaches. (Centralised safety net arrangements continue to apply for those employees unable to take advantage of enterprise bargaining arrangements.)
- The absolute reliance of most social welfare beneficiaries on the CPI for indexation of their incomes has changed with the enactment of the *Social Security and Veterans' Affairs Amendment (Male Total Average Weekly Earnings Benchmark) Act 1997*, which provides for adjustments should the maximum rate of the CPI-adjusted single adult pension fall below 25% of Male Total Average Weekly Earnings.

Taking these changes into consideration it was decided that the Australian community would now be better served by a CPI designed specifically to provide a general measure of price inflation for the household sector as a whole. The CPI reference population has been extended to cover all private households in capital cities.

### **Item coverage and commodity classification**

The most noticeable changes to the item coverage resulting from the review were the exclusion of mortgage interest and consumer credit charges from the index and the inclusion of expenditure on new dwellings (excluding land).

The sample of items covered by the CPI was also updated to better reflect the current expenditure of the target population. Additions to the sample included Computing equipment, Tertiary education fees and Domestic services.

A number of classification changes were made to update some of the expenditure class titles. For example, Telephone services was changed to Communication services, enabling the inclusion of faxes, and other forms of communication, such as email, as they become significant. Some expenditure classes were amalgamated or removed where expenditure had become insignificant since the last review. For example, Butter no longer has its own expenditure class, but is included in the Fats and oils expenditure class.

A new subgroup, Utilities, comprising items previously grouped under separate headings, was added to the Housing group. The Selected State and Local Government Charges Index has been dropped as it has become less relevant following the corporatisation and privatisation of many previously State-run enterprises.

A Financial Services group is expected to be introduced to the CPI in the year 2000. This group will measure the changes in the prices paid by households for a range of services including those incurred in respect of borrowings, savings, maintenance of accounts with financial institutions, accessing investment advice and the purchase of shares etc. These measures will cover both direct fees and charges and indirect costs incorporated in the interest rate margins of financial intermediaries.

For more detail on the changes made to the item coverage and commodity classification for the 13th Series CPI see the Appendix to *Consumer Price Index Australia* (6401.0) for the June or September quarter 1998.

### **Special series**

A new 'Tradeables vs Non-Tradeables' index will be developed which will differentiate between items according to whether or not their prices are influenced predominantly by world market prices. This index will replace the price index of imported items used mainly by the Reserve Bank of Australia as a measure of the impact of world markets on Australian inflation.

### **Other**

User input to the review did not indicate that monthly calculation and publication of the CPI was a high priority given the high additional costs that would be incurred. It was therefore decided that the CPI would continue to be calculated and published quarterly.

An assessment of costs and benefits concluded that, while there was some support for an extension of the CPI coverage beyond capital cities, this was not sufficient to justify the additional expense.

## Producer Price Indexes

The Producer Price Indexes measure changes in prices received, or paid, by producers of commodities. Specifically, in Australia they relate to prices for goods as they enter and leave the manufacturing sector and for goods entering the building industry. This contrasts with the Consumer Price Index which measures changes in the retail prices paid by consumers, as explained earlier in this chapter.

### Long-term price series

Table 28.7 presents a set of producer price indexes for the years 1861 to 1996–97. The indexes comprise the linked wholesale price indexes from 1861 to 1967–68 and the producer price index for manufacturing from 1968–69 onwards. These indexes are discussed below.

The first price index of this kind compiled by the ABS was the Melbourne Wholesale Price Index, which was introduced in 1912 with index numbers compiled back to 1861 from prices extracted from newspapers and trade publications. Index numbers were compiled up to 1961. The index related chiefly to basic materials and foods weighted in accordance with consumption in about the year 1910.

The next index published was the Wholesale Price (Basic Materials and Foodstuffs) Index which was introduced in 1939; index numbers are available for the period 1928 to 1970. The index related to commodities in their basic or primary form, and prices were obtained as near as possible to the point where they made their first effective impact on the local price structure. With few exceptions, prices were obtained from Melbourne sources.

The present range of producer price indexes was developed and produced progressively from the 1960s. The current indexes relate to the building industry, manufacturing industry, and (not included in this chapter) the mining industry. The current set of producer price indexes is somewhat restricted in scope, being confined to the measurement of prices for goods used in or produced by the selected industries. As part of a long term program, the ABS is expanding the coverage of the producer price indexes to include the measurement of price changes for the output of the service industries and the construction industry. This expansion in coverage is being undertaken in parallel with a move towards the implementation of a 'stage of production' framework for the producer price indexes, to supplement the current industry sector approach.

**28.7 PRODUCER AND  
WHOLESALE PRICE INDEXES(a)**

	Index no.
Melbourne Wholesale Price Index (All groups)	
1861	24.2
1871	19.3
1881	17.6
1891	14.9
1901	15.3
1911	15.7
1921	30.0
1925–26	29.7
Wholesale Price (Basic Materials and Foodstuffs) Index (All groups)	
1930–31	25.4
1935–36	23.9
1940–41	29.3
1945–46	36.5
1950–51	62.7
1955–56	85.9
1960–61	92.5
1961–62	86.4
1962–63	87.4
1963–64	90.0
1964–65	91.3
1965–66	95.4
1966–67	98.4
1967–68	99.7
Price Index of Articles Produced by Manufacturing Industry	
1968–69	100.0
1969–70	103.9
1970–71	108.5
1971–72	113.9
1972–73	120.7
1973–74	134.6
1974–75	158.1
1975–76	177.8
1976–77	196.9
1977–78	213.8
1978–79	237.4
1979–80	274.9
1980–81	305.2
1981–82	328.9
1982–83	360.2
1983–84	382.8
1984–85	404.8
1985–86	430.3
1986–87	458.5
1987–88	492.1
1988–89	526.0
1989–90	559.9
1990–91	584.6
1991–92	586.7
1992–93	600.9
1993–94	607.3
1994–95	620.9
1995–96	636.7
1996–97	639.9
1997–98	648.3

(a) Reference base year 1968–69 = 100.0.

Source: Labour Report; Price Indexes of Articles Produced by Manufacturing Industry, Australia (6412.0).



**28.8 PRICE INDEX OF MATERIALS USED IN HOUSE BUILDING, Six State Capital Cities(a)(b)**

Year	Weighted average of six State capital cities	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
1991–92	<b>104.9</b>	105.0	102.8	107.9	104.5	106.0	108.0
1992–93	<b>106.9</b>	106.8	105.7	110.2	106.3	106.9	109.9
1993–94	<b>112.0</b>	111.3	112.1	113.5	117.1	109.1	112.8
1994–95	<b>115.4</b>	115.0	115.9	115.9	118.8	112.7	117.3
1995–96	<b>115.7</b>	115.9	115.4	115.1	118.2	114.8	120.7
1996–97	<b>116.1</b>	116.3	115.3	115.3	120.6	115.3	120.1
1997–98	<b>118.2</b>	119.7	117.1	117.1	123.3	115.9	121.0

(a) Reference base year 1989–90 = 100.0. (b) The separate city indexes measure price movement within each city individually. They do not compare price levels between cities.

Source: *Price Index of Materials Used in House Building, Six State Capital Cities (6408.0)*.

## Construction price indexes

### Price Index of Materials Used in House Building

The Price Index of Materials Used in House Building measures changes in prices of selected materials used in the construction of houses in the Statistical Division containing each State capital city. The current index series were introduced in December 1995 on a reference base of 1989–90 = 100.0 and were linked to the previous series. The items and weights for the current series are based on estimated materials usage in a sample of representative houses constructed in the three years ending 1992–93.

The index was first compiled on a reference base of 1966–67 = 100.0, using a weighting pattern derived from estimated materials usage in 1968–69. Index numbers on a 1966–67 = 100.0 reference base are available for the period July 1966 to September 1986.

Rebased series of indexes were then introduced in October 1986 on a reference base of 1985–86 = 100.0 and were linked to the previous series. The items in the rebased series were selected and allocated weights on the basis of the estimated values of each material used in a sample of representative houses constructed in 1985–86.

Table 28.8 shows price index series for the seven years 1991–92 to 1997–98, for the weighted average of the six State capital cities and for the individual cities.

### Price Index of Materials Used in Building Other than House Building

The Price Index of Materials Used in Building Other than House Building measures changes in prices of selected materials used in the construction of buildings other than houses in metropolitan areas. The types of building directly represented in the index are: flats and other dwellings; hotels, motels and hostels; shops; factories; offices; other business premises; education buildings; health buildings; and other non-residential buildings.

The current index series were introduced in October 1993 on a reference base of 1989–90 = 100.0. The composition of these indexes reflects the usage of materials in the five years ending June 1992.

The index was first compiled on a reference base of 1966–67 = 100.0 using a weighting pattern derived from estimated materials usage in 1966–67. Rebased indexes for the six State capital cities were introduced in February 1981 on a reference base of 1979–80 = 100.0. The composition of these indexes reflected the usage of materials in the three years ending June 1977.

Table 28.9 shows price index series for the seven years 1991–92 to 1997–98, for the weighted average of the six State capital cities and for the individual cities.

A table setting out more detailed information in respect of individual building materials is contained in *Chapter 20, Construction*.

## 28.9 PRICE INDEX OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING, Six State Capital Cities(a)(b)

Year	Weighted average of six State capital cities	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
1991–92	<b>105.7</b>	107.2	103.4	107.4	105.4	105.2	107.1
1992–93	<b>106.0</b>	106.5	104.4	108.9	105.1	105.7	108.2
1993–94	<b>107.5</b>	107.0	106.7	110.1	107.9	107.1	110.1
1994–95	<b>110.4</b>	110.3	108.9	112.9	110.9	110.1	112.2
1995–96	<b>112.7</b>	112.6	111.1	115.0	112.7	113.2	115.1
1996–97	<b>113.2</b>	113.1	110.9	115.9	114.1	114.6	116.3
1997–98	<b>114.2</b>	114.4	111.4	117.2	115.1	114.6	117.4

(a) Reference base year 1989–90 = 100.0. (b) The separate city indexes measure price movements within each city individually. They do not compare price levels between cities.

Source: Price Index of Materials Used in Building Other than House Building, Six State Capital Cities (6407.0).

## Manufacturing price indexes

### Price Indexes of Materials Used in Manufacturing Industries

These indexes measure changes in prices of materials used by establishments classified to the Manufacturing Division of the *Australian and New Zealand Standard Industrial Classification* (ANZSIC), 1993 edition.

Separate price indexes are published for materials used in the Manufacturing Industry as a whole (split into imported and domestic materials) and for 17 separate Manufacturing sectors (defined in terms of ANZSIC subdivisions or ANZSIC groups).

The indexes are compiled and published on a net sector basis, that is, each index includes only those materials which are used in the defined sector of Australian manufacturing industry and which have been produced by establishments outside that sector.

The current index series were introduced in July 1996 on a reference base of 1989–90 = 100.0. The items included in the indexes were allocated weights in accordance with the estimated value of manufacturing usage in 1989–90.

The indexes were first compiled on a reference base of 1968–69 = 100.0, using a weighting pattern derived from estimated manufacturing usage in 1971–72. Index numbers for this first series are available for the period July 1968 to November 1985.

A rebased series was introduced in December 1985 on a reference base of 1984–85 = 100.0 using a weighting pattern based on estimated manufacturing usage in 1977–78.

## 28.10 PRICE INDEXES OF MATERIALS USED IN MANUFACTURING INDUSTRIES(a)

Year	Imported materials	Domestic materials	All materials
1991–92	101.8	101.2	<b>101.4</b>
1992–93	107.8	105.7	<b>106.4</b>
1993–94	108.8	102.5	<b>104.7</b>
1994–95	112.7	104.9	<b>107.6</b>
1995–96	117.6	106.0	<b>110.1</b>
1996–97	109.4	104.2	<b>106.0</b>
1997–98	112.2	104.1	<b>107.0</b>

(a) Reference base year 1989–90 = 100.0.

Source: Price Indexes of Materials Used in Manufacturing Industries, Australia (6411.0).

## Price Indexes of Articles Produced by Manufacturing Industries

These indexes measure movements in the prices of articles produced by manufacturing industry. For the purpose of the indexes, manufacturing industry is defined to be establishments classified to the Manufacturing Division of the *Australian Standard Industrial Classification* (ASIC), 1983 edition.

Separate price indexes are published for articles produced by the Manufacturing Industry as a whole and for 13 separate Manufacturing sectors (defined in terms of ASIC subdivisions or ASIC groups).

The indexes are constructed on a net sector basis. This approach means that the All Manufacturing Industry Index represents price movements of goods which are produced by establishments in the Manufacturing Division, for sale or transfer to establishments outside the Manufacturing Division, for export, or for use as capital equipment. Articles which are sold or

transferred to other establishments within manufacturing industry, for further processing or for use as inputs, are excluded.

The current indexes were introduced from May 1990. The composition and weighting pattern are based on the value of production in 1986–87 and the indexes are on a reference base of 1988–89 = 100.0.

The indexes were first published in June 1976 on a reference base of 1968–69 = 100.0, with indexes compiled retrospectively to July 1968. The composition and weighting patterns of the indexes were based on the value of production in 1971–72.

Tables 28.10 and 28.11 set out summary indexes for both materials used and articles produced. Tables setting out more detailed index numbers are contained in *Chapter 19, Manufacturing*.

**28.11 PRICE INDEXES OF ARTICLES PRODUCED BY MANUFACTURING INDUSTRIES(a)(b)**

Year	Manufacturing Division Index
1991–92	111.6
1992–93	114.3
1993–94	115.5
1994–95	118.1
1995–96	121.1
1996–97	121.8
1997–98	123.4

(a) Reference base year 1988–89 = 100.0. (b) For a full description of Division C, Manufacturing and the subdivisions within the Manufacturing Division, see Australian Standard Industrial Classification (ASIC) (1201.0), 1983 edition.

Source: *Price Indexes of Articles Produced by Manufacturing Industry, Australia* (6412.0).

## International Trade Price indexes

### Export Price Index

The Export Price Index measures changes in prices of exports of merchandise from Australia. The index numbers for each month relate to prices of exports actually shipped during the period.

The first index of export prices was compiled annually from 1901 to 1916–17 as a current weighted unit value index.

The method of calculation was changed in 1918 to incorporate fixed weights, applied to the average unit values of each export in successive years. This index was published for the years 1897 to 1929–30.

Two new series of monthly export price indexes were published in 1937, compiled back to 1928. One index used fixed weights and the other used changing weights. The methodology was changed and actual export prices were used instead of unit values. The indexes were compiled until 1962.

In 1962, a fixed weighted index on the reference base of 1959–60 = 100.0 was introduced. A new interim series was linked to this index, still with a reference base of 1959–60 = 100.0, but with updated weights from July 1969. The interim index was replaced in 1979 by an index on a reference base of 1974–75. The current index with a reference base of 1989–90 = 100.0 was released in 1990.

### Import Price Index

The Import Price Index measures changes in the prices of imports of merchandise landed in Australia on a free-on-board country of origin basis. The index numbers for each month relate to prices of imports landed in Australia during the period.

The first import price index produced by the ABS covered the period from the September quarter 1981 to the June quarter 1991 on a reference base of 1981–82 = 100.0. This index replaced an index previously published by the Reserve Bank of Australia on a reference base of 1966–67 = 100.0. The Reserve Bank's import price index was published from 1928 until September 1982.

The current Import Price Index series was introduced in December 1991 with index numbers compiled from April 1991 onwards, on a reference base of 1989–90 = 100.0.

To give a broad indication of long-term changes, table 28.12 draws on the available international trade indexes.

Tables setting out more detailed index numbers for both imports and exports are contained in *Chapter 30, International accounts and trade*.

### 28.12 INTERNATIONAL TRADE PRICE INDEXES(a)

Year	Export Price Index (All groups)	Import Price Index (All groups)
1901	15	..
1911	17	..
1921-22	25	..
1931-32	18	22
1936-37	29	21
1941-42	27	35
1946-47	53	51
1951-52	123	92
1956-57	115	91
1960-61	93	95
1961-62	94	94
1962-63	99	94
1963-64	112	96
1964-65	103	97
1965-66	105	99
1966-67	103	100
1967-68	98	99
1968-69	100	100
1969-70	101	103
1970-71	99	108
1971-72	102	114
1972-73	131	113
1973-74	157	131
1974-75	177	189
1975-76	193	214
1976-77	216	246
1977-78	227	278
1978-79	256	307
1979-80	309	403
1980-81	328	450
1981-82	332	458
1982-83	360	506
1983-84	369	524
1984-85	396	580
1985-86	417	659
1986-87	430	731
1987-88	469	742
1988-89	501	694
1989-90	527	729
1990-91	501	752
1991-92	472	749
1992-93	493	817
1993-94	484	843
1994-95	501	837
1995-96	508	838
1996-97	488	791
1997-98	522	841

(a) Reference base year 1968-69 = 100.0.

Source: The sources used for the Import Price Index are the Reserve Bank of Australia Bulletin up to and including 1981-82, and the ABS Import Price Index, Australia (6414.0) thereafter. The source used for the Export Price Index is the ABS Export Price Index, Australia (6405.0).

## Bibliography

### ABS publications

- A Guide to the Consumer Price Index* (6440.0).
- Australian Consumer Price Index: Concepts, Sources and Methods* (6461.0).
- Australian Harmonised Export Commodity Classification* (1233.0).
- Australian Standard Industrial Classification, Volume 1—The Classification* (1201.0).
- Average Retail Prices of Selected Items, Eight Capital Cities* (6403.0).
- Consumer Price Index* (6401.0).
- Export Price Index, Australia* (6405.0).
- House Price Indexes: Eight Capital Cities* (6416.0).
- Import Price Index, Australia* (6414.0).
- Information Paper: An Analytical Framework for Price Indexes in Australia* (6421.0).
- Information Paper: Issues to be Considered during the 13th Series Australian Consumer Price Index Review 1997* (6451.0).
- Information Paper: Outcome of the 13th Series Australian Consumer Price Index Review* (6453.0).
- Information Paper: Review of the Price Indexes of Articles Produced by Manufacturing Industry* (6418.0).
- Information paper: The Australian Consumer Price Index 12th Series Review* (6450.0).
- Labour Report*, Nos 1-61.
- Price Indexes of Articles Produced by Manufacturing Industry, Australia* (6412.0).
- Price Index of Materials Used in Building Other Than House Building, Six State Capital Cities* (6407.0).
- Price Index of Materials Used in House Building, Six State Capital Cities* (6408.0).
- Price Indexes of Materials Used in Manufacturing Industries, Australia* (6411.0).
- Price Indexes of Articles produced by Manufacturing Industry, Australia* (6412.0).
- Producer and Foreign Trade Price Indexes: Concepts, Sources and Methods* (6419.0).

### Other publications

- Reserve Bank of Australia, *The Reserve Bank of Australia Bulletin*, various issues.



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## Introduction

There is a wide range of economic data available to analyse the performance of various components of the Australian economy over time. For example, data are regularly published on the number of houses being built, the number of cars produced, whether employment is rising or falling, the composition of exports and imports and so on. While these and other statistical series are important in their own right, none of them in isolation can provide an overall picture of the state of the economy.

National accounts are designed to provide a systematic summary of national economic activity, and have been developed to assist in the practical application of economic theory. At their summary level, the national income, expenditure and product accounts reflect the key economic flows of the Keynesian economic system: production, the distribution of incomes, consumption, saving and investment. At their more detailed level, they are designed to present a statistical picture of the structure of the economy and the detailed processes that make up domestic production and its distribution. The national accounts include many detailed classifications (e.g. by industry, by purpose, by commodity, by State and Territory, and by asset type) relating to major economic aggregates.

The main output from the national accounts is a measure of the overall value of economic production in Australia in a given period, but without any double counting of the goods and services being produced. Many goods and services are bought by businesses for use in their own productive activities (e.g. steel is bought by car manufacturers). If the value of all goods and services produced were simply added together there would be serious duplication because some goods and services would be added in several times at various stages of production.

The overall measure of production, excluding double counting, is called 'gross domestic product', which is commonly referred to as GDP. It is formally defined as:

"the total market value of goods and services produced in Australia after deducting the cost of goods and services used up (intermediate consumption) in the process of production, but before deducting allowances for the consumption of fixed capital (depreciation)."

The performance of the economy, as represented in national accounting measures such as growth in the national income or GDP, is not an end in itself. Movements in GDP at constant prices are an important measure of economic growth, but there is no single indicator which can describe all aspects of the wellbeing of a country's citizens.

There are significant aspects of the quality of life which cannot be comprehended in a system of economic accounts, just as there are significant aspects of an individual's wellbeing which are not measured in the conventional concept (or any other concept) of that individual's income.

Notwithstanding their limitations, especially in relation to uses for which they were never designed, the national accounts provide vital information for a range of important purposes. The system of national accounts also provides a framework or structure which can be, and has been, adapted and extended to facilitate the examination of other economic and social policy issues.

A detailed presentation of the concepts underlying the national accounts is provided in the ABS publication *Australian National Accounts: Concepts, Sources and Methods* (5216.0). This publication, updated in 1996, forms part of the *Statistical Concepts Reference Library* (1361.0.30.001) on CD-ROM.

## Major changes to the national accounts

In 1998, the ABS introduced major changes to the Australian national accounts (ANA) resulting from the implementation of revised international statistical standards. The changes were far reaching, and affect the measurement and presentation of key national accounts data items including GDP, investment, and national and sector saving. Three broad areas of change were involved:

- changes to concepts, terminology, classifications and data presentations;
- integration of the national income, expenditure and product (NIEP) accounts with the input-output (I-O) tables; and
- introduction of annually reweighted chain volume measures to replace the existing constant price estimates.

The central international standard for national accounts statistics is the *System of National Accounts* (SNA), which was revised in 1993 (SNA93). The edition previously used by the ABS in compiling the ANA was published in 1968 (SNA68).

The changes brought about by SNA93 are widespread. The revised system comprises a more comprehensive and integrated set of accounts than its predecessor. In particular, what are currently known as the NIEP accounts, the I-O tables, the financial flow accounts and the balance sheet in the ANA have been brought together in a fully integrated way. This allows users to examine not only the

production relationships in the accounts but also the ways in which these relationships affect Australia's net worth and financial position. Further, the introduction of satellite accounts through the use of complementary and alternative concepts and classifications will extend the analytical capacity of the national accounts in areas such as tourism, health and the environment.

The changes have been 'backcast' as far back as required to maintain consistency of time series. For current price series in the production account of the NIEP accounts, this is generally back to 1959–60.

A more detailed description of changes to the structure of the accounts and changes which have led to revisions in the level and movement of GDP is contained in the Information Papers *Implementation of Revised International Standards in the Australian National Accounts* (5251.0), *Introduction of Chain Volume Measures in the Australian National Accounts* (5248.0) and *Upgraded Australian National Accounts* (5253.0).

The last issues of the ANA to be released on the SNA68 basis were the June quarter 1998 releases of *Australian National Accounts: National Income, Expenditure and Product* (5206.0) and *Australian National Accounts: Financial Accounts* (5232.0). However, as a complete set of national accounts on the SNA93 basis could not be produced prior to the timetable for this edition of *Yearbook Australia*, all data presented in the present chapter are on the SNA68 basis.

## Measurement of GDP

There are three ways of measuring GDP:

- The *income approach*, which measures GDP by summing the incomes accruing from production (wages, salaries and supplements; gross operating surplus (GOS) (profits); and indirect taxes less subsidies).
- The *expenditure approach*, which involves summing all final expenditures on goods and services (i.e. those goods and services which are not processed any further), adding on the contribution of exports and deducting the value of imports. Final expenditures consist of final consumption expenditure, gross fixed capital expenditure and increase in stocks. Exports are included in GDP because they are part of Australian production even though they are sold to overseas purchasers. Imports are deducted because, although they are included in final expenditures (e.g. when someone buys an imported video recorder its value is included as part of private final consumption expenditure) they are not part of Australian production.
- The *production approach* calculates GDP by taking the market value of goods and services produced by an industry (its gross output) and deducting the cost of goods and services used up by the industry in the productive process (intermediate consumption), which leaves the value added by the industry (also called its gross product). GDP is then obtained by summing the gross product of all industries.

In theory, the three approaches result in identical estimates of GDP. In practice, because of the need to use different data sources for each method, the value of GDP obtained from each approach differs. The ABS refers to the above three alternative estimates of GDP as GDP(I), GDP(E) and GDP(P), respectively.

A fourth measure, the simple average of these three, referred to as GDP(A), is the preferred estimate of economic growth for Australia when expressed in constant price terms. Movements in GDP(A) provide a smoother and more reliable indicator of turning points in the economy than do changes in any of the individual measures of GDP. Quarterly changes in the constant price trend of GDP(A) are considered by the ABS to be the best indicator of short-term growth. Constant price data are published for all four estimates in original, seasonally adjusted and trend terms (see *Constant price or 'real' GDP* below).

Table 29.1 shows time series at constant prices for each of these measures of GDP from 1962–63 to 1996–97.

GDP(A) at average 1989–90 prices increased by 2.7% in 1996–97 following an increase of 4.1% in 1995–96. For some analytical purposes, it is important to allow for the impact of population growth on movements in GDP. Annual growth in GDP(A) per capita has been about 1 to 1.8 percentage points lower than that for GDP(A) since 1973–74 and was negative in 1977–78, 1982–83, 1990–91 and 1991–92 (graph 29.2).

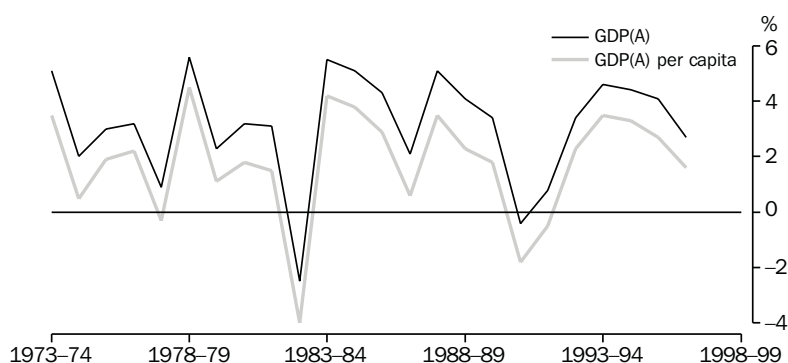
## 29.1 GROSS DOMESTIC PRODUCT(a)

	GDP(I)	GDP(E)	GDP(P)	GDP(A)
Year	\$m	\$m	\$m	\$m
1962–63	128 252	128 455	127 613	128 395
1963–64	137 333	137 439	136 221	137 304
1964–65	147 038	146 148	145 913	146 695
1965–66	150 235	149 522	147 831	149 529
1966–67	160 115	159 839	157 068	159 361
1967–68	166 088	166 437	164 044	165 893
1968–69	180 699	180 609	179 254	180 591
1969–70	190 830	190 050	188 615	190 256
1970–71	199 982	200 271	196 764	199 449
1971–72	209 657	209 079	202 855	207 655
1972–73	217 721	216 403	209 290	214 944
1973–74	227 834	223 384	224 975	225 905
1974–75	232 139	228 784	230 709	230 362
1975–76	238 964	238 836	234 603	237 282
1976–77	245 883	246 180	243 331	244 940
1977–78	248 415	247 676	246 078	247 195
1978–79	262 254	263 652	258 135	261 143
1979–80	267 704	269 972	264 343	267 131
1980–81	277 139	277 657	273 155	275 769
1981–82	283 453	286 693	283 858	284 444
1982–83	278 604	280 430	273 625	277 337
1983–84	295 516	295 728	287 269	292 612
1984–85	308 915	309 346	304 255	307 506
1985–86	322 573	323 793	315 908	320 758
1986–87	330 339	331 114	320 940	327 464
1987–88	346 269	346 549	340 152	344 323
1988–89	360 123	355 961	359 042	358 375
1989–90	371 471	368 200	371 471	370 381
1990–91	368 739	367 019	370 863	368 874
1991–92	370 248	374 048	370 738	371 678
1992–93	382 591	387 808	383 054	384 484
1993–94	401 451	403 935	400 900	402 095
1994–95	420 838	418 812	419 586	419 745
1995–96	437 264	436 932	436 270	436 822
1996–97	450 575	446 762	448 726	448 688

(a) At average 1989–90 prices.

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0 and 5206.0).

## 29.2 GDP(A) AND GDP(A) PER CAPITA



Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

## Constant price or 'real' GDP

The expenditure approach to calculating GDP measures Australian production by summing the amounts spent by the final users on the goods and services produced. However, by itself this is not always a good measure of production, since changes in the value of a particular good or service are affected by inflation, as well as changes in quantities actually produced.

For example, the national accounts may show that the amount spent on motor cars is 5% higher this year than it was last year. If the price of cars has increased by 5% over the last year, then the number of cars bought will not have changed—expenditure has risen only because the price of cars has risen.

For a lot of uses, it is necessary to know how much physical production (e.g. the number of cars made) has changed, rather than just the current (or dollar) value of production. Constant price estimates are the way in which this is achieved. They provide a measure, in dollar values, which indicates changes in the actual quantity of items produced or purchased. Because of this, constant price estimates of GDP are often referred to as estimates of real GDP.

In essence, estimates of GDP at constant prices involve finding indicators of price changes for the items included in the national accounts, and using these to remove the effects of inflation from the estimates of GDP. Constant price estimates are expressed in terms of the average prices prevailing in a selected base year (currently 1989–90). Some of the main indicators used in this process are the component series from the Consumer Price Index, which measures

changes over time in the price of a basket of goods and services bought by households. Other price indexes produced by the ABS (such as the Import Price Index) are also used extensively in compiling the constant price estimates.

## Implicit price deflators

A by-product of the calculation of constant price estimates is the Implicit Price Deflator (IPD). An IPD is the price index obtained when a current price estimate is divided by the corresponding constant price estimate. The ABS publishes a time series of IPDs for each of the expenditure side aggregates (excluding the increase in stocks) in the domestic production account.

IPDs calculated from the major national accounting aggregates such as gross national expenditure are widely used as a broader measure of inflation in the economy than that available from any of the individual price indexes published by the ABS. However, care has to be taken in the interpretation of IPDs as they do not compare the price of a constant basket of goods between any two periods except when comparing the base period with another period. Therefore, they reflect a combination of the effects of actual price changes and changes in the composition of the aggregate from which the deflator is derived. An alternative set of price indexes, based on the expenditure side of the domestic production account, is provided by fixed-weighted price indexes for the major expenditure aggregates. They measure the change in price of the basket of goods and services included in GDP using the proportions produced in 1989–90.

## National income, expenditure and product accounts

The Australian national income, expenditure and product accounts are compiled and published in some detail every quarter, in *Australian National Accounts: National Income, Expenditure and Product* (5206.0), and in greater detail once a year, in *Australian National Accounts: National Income, Expenditure and Product* (5204.0).

## Domestic production account

The domestic production account indicates changes in Australian production over time. Tables 29.3 and 29.4 show the domestic production account in current prices for a

number of years between 1962–63 and 1996–97; table 29.3 shows a series of snapshots at five-yearly intervals to 1983–84, while table 29.4 shows annual time series from 1988–89 to 1996–97. Tables 29.5 and 29.6 show the same series, for the same years, at average 1989–90 prices.

Table 29.6 shows that, in real terms (i.e. after the effects of inflation are removed from the dollar value of Australia's production), there was a fall in production during the 1990–91 financial year. However, the six years since the recession in 1990–91 have all shown growth in GDP. Although growth in 1991–92, as measured by GDP(I), was relatively low (0.4%), by 1993–94 it had accelerated to 4.9% and in 1996–97 it was 3.0%.

**29.3 DOMESTIC PRODUCTION ACCOUNT—Five-Yearly**

	1963–64	1968–69	1973–74	1978–79	1983–84
	\$m	\$m	\$m	\$m	\$m
Final consumption expenditure					
Private	11 527	17 076	30 730	64 228	116 722
Government	2 175	3 892	7 954	19 099	35 860
Private gross fixed capital expenditure	3 175	5 213	9 125	18 377	30 173
Public gross fixed capital expenditure	1 480	2 322	3 805	7 607	14 152
Increase in stocks	120	682	1 166	1 343	1 376
<i>Gross national expenditure</i>	<i>18 477</i>	<i>29 185</i>	<i>52 780</i>	<i>110 654</i>	<i>198 283</i>
Exports of goods and services	3 149	3 887	7 890	16 893	28 773
Imports of goods and services	2 846	4 255	7 893	17 978	31 304
<b>Gross domestic product (GDP(E))</b>	<b>18 780</b>	<b>28 817</b>	<b>52 777</b>	<b>109 569</b>	<b>195 752</b>
Statistical discrepancy	–78	–96	833	–1 110	78
Wages, salaries and supplements	9 140	14 627	28 894	57 085	100 621
Gross operating surplus					
Trading enterprises	7 638	11 050	19 133	38 931	71 872
<i>Total</i>	<i>7 806</i>	<i>11 377</i>	<i>19 613</i>	<i>40 286</i>	<i>72 731</i>
Indirect taxes less subsidies	1 756	2 717	5 103	11 088	22 478
<b>Gross domestic product (GDP(I))</b>	<b>18 702</b>	<b>28 721</b>	<b>53 610</b>	<b>108 459</b>	<b>195 830</b>

Source: *Australian National Accounts: National Income, Expenditure and Product* (5204.0).

**29.4 DOMESTIC PRODUCTION ACCOUNT—Annual**

	1988–89	1989–90	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Final consumption expenditure									
Private	196 364	218 314	231 700	244 229	256 737	269 502	286 830	306 369	318 480
Government	56 662	61 482	66 602	71 598	74 492	76 838	79 341	83 437	86 419
Private gross fixed capital expenditure	67 198	67 817	60 419	56 762	62 941	69 829	77 017	79 991	86 304
Public gross fixed capital expenditure	17 891	21 766	21 050	20 728	19 790	18 667	20 909	20 295	19 230
Increase in stocks	3 501	5 203	–1 549	–2 177	482	1 233	2 581	2 239	–1 410
<i>Gross national expenditure</i>	341 616	374 582	378 222	391 140	414 442	436 069	466 678	492 331	509 023
Exports of goods and services	55 110	60 625	65 988	69 753	76 465	82 531	87 090	98 528	104 601
Imports of goods and services	60 734	67 007	65 220	67 439	77 400	83 496	95 680	99 107	101 691
<b>Gross domestic product (GDP(E))</b>	<b>335 992</b>	<b>368 200</b>	<b>378 990</b>	<b>393 454</b>	<b>413 507</b>	<b>435 104</b>	<b>458 088</b>	<b>491 752</b>	<b>511 933</b>
Statistical discrepancy	3 889	3 271	1 771	–3 987	–5 555	–2 668	2 203	361	4 373
Wages, salaries and supplements	163 744	182 279	190 386	194 510	201 523	211 947	225 705	241 374	257 597
Gross operating surplus									
Trading enterprises	134 030	144 980	145 029	149 586	157 320	165 719	175 814	188 490	193 578
Total	134 936	144 774	145 735	150 774	160 890	169 772	178 416	190 100	195 401
Indirect taxes less subsidies	41 201	44 418	44 640	44 183	45 539	50 717	56 170	60 639	63 308
<b>Gross domestic product (GDP(I))</b>	<b>339 881</b>	<b>371 471</b>	<b>380 761</b>	<b>389 467</b>	<b>407 952</b>	<b>432 436</b>	<b>460 291</b>	<b>492 113</b>	<b>516 306</b>

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0 and 5206.0).

**29.5 DOMESTIC PRODUCTION ACCOUNT, At Constant Prices(a)—Five-Yearly**

	1963–64	1968–69	1973–74	1978–79	1983–84
	\$m	\$m	\$m	\$m	\$m
Final consumption expenditure					
Private	83 295	104 625	133 799	154 544	178 563
Government	18 684	26 933	33 616	43 085	49 595
Private gross fixed capital expenditure	23 807	34 009	41 789	44 878	47 779
Public gross fixed capital expenditure	11 259	14 722	16 661	17 979	19 888
Increase in stocks	711	4 894	5 021	2 987	2 503
<i>Gross national expenditure</i>	139 207	186 249	232 067	265 069	298 970
Exports of goods and services	15 976	20 030	26 392	35 325	39 759
Imports of goods and services	17 190	24 352	33 535	36 759	43 176
<b>Gross domestic product (GDP(E))</b>	<b>137 439</b>	<b>180 609</b>	<b>223 384</b>	<b>263 652</b>	<b>295 728</b>
Statistical discrepancy	–106	90	4 450	–1 398	–212
<b>Gross domestic product (GDP(I))</b>	<b>137 333</b>	<b>180 699</b>	<b>227 834</b>	<b>262 254</b>	<b>295 516</b>

(a) At average 1989–90 prices. Estimates prior to 1984–85 have been derived by linking estimates for earlier base years to estimates at average 1989–90 prices.

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

**29.6 DOMESTIC PRODUCTION ACCOUNT, At Constant Prices(a)—Annual**

	1988–89	1989–90	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Final consumption expenditure									
Private	209 062	218 314	220 424	226 400	233 317	241 178	253 544	263 754	269 954
Government	59 540	61 482	63 132	65 106	66 071	67 367	69 666	71 743	72 844
Private gross fixed capital expenditure	70 944	67 817	59 873	56 639	61 116	66 493	73 260	76 257	85 506
Public gross fixed capital expenditure	18 904	21 766	20 545	20 292	19 180	18 215	20 490	19 785	18 685
Increase in stocks	3 698	5 203	–1 169	–2 319	676	989	2 254	1 664	–2 186
Gross national expenditure	362 148	374 582	362 805	366 118	380 360	394 242	419 214	433 203	444 803
Exports of goods and services	57 459	60 625	67 623	73 730	78 194	85 908	89 555	99 254	109 257
Imports of goods and services	63 646	67 007	63 409	65 800	70 746	76 214	89 957	95 525	107 298
<b>Gross domestic product (GDP(E))</b>	<b>355 961</b>	<b>368 200</b>	<b>367 019</b>	<b>374 048</b>	<b>387 808</b>	<b>403 936</b>	<b>418 812</b>	<b>436 932</b>	<b>446 762</b>
Statistical discrepancy	4 162	3 271	1 720	–3 800	–5 217	–2 485	2 026	332	3 813
<b>Gross domestic product (GDP(I))</b>	<b>360 123</b>	<b>371 471</b>	<b>368 739</b>	<b>370 248</b>	<b>382 591</b>	<b>401 451</b>	<b>420 838</b>	<b>437 264</b>	<b>450 575</b>

(a) At average 1989–90 prices.

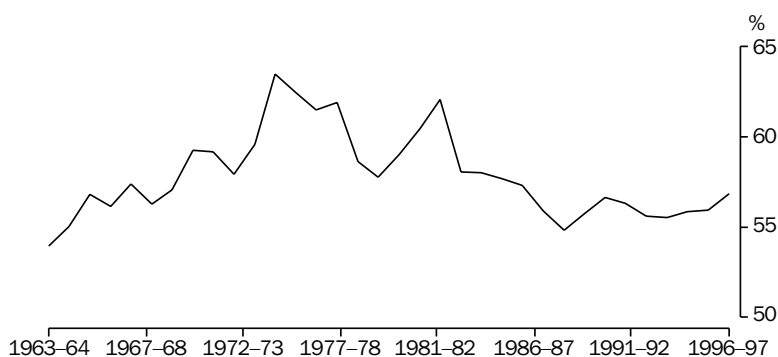
Source: Australian National Accounts: National Income, Expenditure and Product (5204.0 and 5206.0).

The domestic production account can also be used to show changes in the share of income accruing to labour (i.e. wages, salaries and supplements) compared with the share accruing to capital (i.e. profits). Graphs 29.7 and 29.8 show how the shares of each of wages and profits (defined as the gross operating surplus of private corporate trading enterprises) to GDP(I) at factor cost have changed since 1963–64. (GDP(I) at factor cost is equal to GDP(I) less indirect taxes plus subsidies.)

The highest recorded value of the wages share of GDP(I) at factor cost was 63.5% in 1974–75. The wages share has recovered slightly from its recent low value of 54.8% in 1988–89, but remains at a relatively low level compared with most of the 1970s and early 1980s.

The profits share of GDP(I) at factor cost fell to 13.1% in 1974–75. During the 1982–83 recession, it fell to 13.6%, but recovered to 17.1% by 1984–85, a level it broadly maintained until the 1990–91 recession, during which it fell to 16.1%. In 1996–97, this ratio was 17.2%.



**29.7 WAGES SHARE OF GDP(I), At Factor Cost**

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

**29.8 PROFITS SHARE OF GDP(I), At Factor Cost**

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

### National income and outlay account

The national income and outlay account shows how much of the national income is spent on final consumption. That part of income which is not spent in this way is saving. Tables 29.9 and

29.10 show the income and outlay account for a number of years between 1963-64 and 1996-97; table 29.9 shows a series of snapshots at five-yearly intervals to 1983-84, while table 29.10 shows annual time series from 1988-89 to 1996-97.

**29.9 NATIONAL INCOME AND OUTLAY ACCOUNT—Five-Yearly**

	1963–64	1968–69	1973–74	1978–79	1983–84
	\$m	\$m	\$m	\$m	\$m
Wages, salaries and supplements	9 140	14 627	28 894	57 085	100 621
Net operating surplus	5 504	7 689	12 703	24 209	42 791
<i>Domestic factor incomes</i>	<i>14 644</i>	<i>22 316</i>	<i>41 597</i>	<i>81 294</i>	<i>143 412</i>
Less net income paid overseas	235	366	406	1 515	4 639
Indirect taxes	1 869	2 969	5 695	12 679	26 001
Less subsidies	113	252	592	1 591	3 523
<i>National income</i>	<i>16 165</i>	<i>24 667</i>	<i>46 294</i>	<i>90 867</i>	<i>161 251</i>
Less net unrequited transfers to overseas	13	9	180	340	–115
<b>National disposable income</b>	<b>16 152</b>	<b>24 658</b>	<b>46 114</b>	<b>90 527</b>	<b>161 366</b>
Final consumption expenditure					
Private	11 527	17 076	30 730	64 228	116 722
Government	2 175	3 892	7 954	19 099	35 860
Saving	2 450	3 690	7 430	7 200	8 784
<b>Disposal of income</b>	<b>16 152</b>	<b>24 658</b>	<b>46 114</b>	<b>90 527</b>	<b>161 366</b>
Gross national product	18 467	28 335	53 204	106 944	191 191

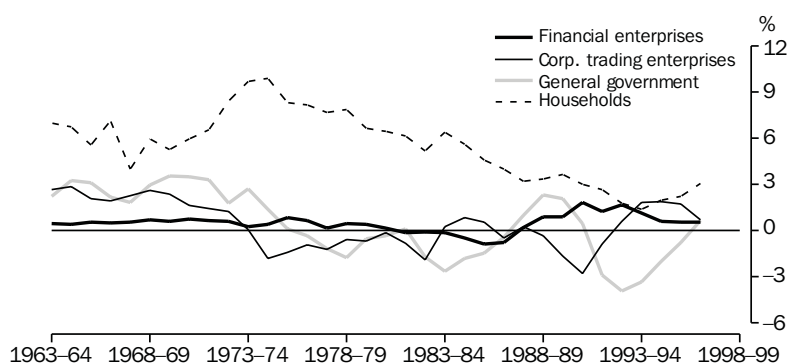
Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

**29.10 NATIONAL INCOME AND OUTLAY ACCOUNT—Annual**

	1988–89	1989–90	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Wages, salaries and supplements	163 744	182 279	190 386	194 510	201 523	211 947	225 705	241 374	257 597
Net operating surplus	83 564	88 777	87 441	90 960	98 111	104 606	111 617	120 570	122 994
<i>Domestic factor incomes</i>	<i>247 308</i>	<i>271 056</i>	<i>277 827</i>	<i>285 470</i>	<i>299 634</i>	<i>316 553</i>	<i>337 322</i>	<i>361 944</i>	<i>380 591</i>
Less net income paid overseas	13 521	17 329	17 550	15 357	13 317	13 510	15 826	16 702	18 126
Indirect taxes	45 817	49 056	50 410	50 188	51 895	57 198	62 403	66 806	70 369
Less subsidies	4 616	4 638	5 770	6 005	6 356	6 481	6 233	6 167	7 061
<i>National income</i>	<i>274 988</i>	<i>298 145</i>	<i>304 917</i>	<i>314 296</i>	<i>331 856</i>	<i>353 760</i>	<i>377 666</i>	<i>405 881</i>	<i>425 773</i>
Less net unrequited transfers to overseas	–1 872	–1 976	–2 143	–1 945	–254	39	–12	–1 023	–1 440
<b>National disposable income</b>	<b>276 860</b>	<b>300 121</b>	<b>307 060</b>	<b>316 241</b>	<b>332 110</b>	<b>353 721</b>	<b>377 678</b>	<b>406 904</b>	<b>427 213</b>
Final consumption expenditure									
Private	196 364	218 314	231 700	244 229	256 737	269 502	286 830	306 369	318 480
Government	56 662	61 482	66 602	71 598	74 492	76 838	79 341	83 437	86 419
Saving	23 834	20 325	8 758	414	881	7 381	11 507	17 098	22 314
<b>Disposal of income</b>	<b>276 860</b>	<b>300 121</b>	<b>307 060</b>	<b>316 241</b>	<b>332 110</b>	<b>353 721</b>	<b>377 678</b>	<b>406 904</b>	<b>427 213</b>
Gross national product	326 360	354 142	363 211	374 110	394 635	418 926	444 465	475 411	498 180

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0 and 5206.0).

29.11 SAVING, By Sector—Share of GDP(I)



Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

Graph 29.11 shows saving by institutional sector as a proportion of GDP(I) for the years 1963–64 to 1996–97. As shown in the graph, household saving as a percentage of GDP(I) rose moderately between 1963–64 and 1974–75, but has fallen subsequently from its high of 9.9% in 1974–75 to 3.1% in 1996–97 (\$15,849m in current value terms). In 1996–97, general government saving was 0.7% of GDP(I) (\$3,397m in current value terms), following a period of negative general government saving stretching back to 1991–92. Saving of corporate trading enterprises has been negative for 11 of the past 20 years. In 1996–97 it was 0.7% of GDP(I) (\$3,546m in current value terms). The 1994–95 level of 1.9% was the highest percentage level since 1969–70. Saving of financial enterprises was negative from 1981–82 to 1986–87, the only period for which this sector has recorded negative saving. In 1996–97, saving of financial enterprises was 0.6% of GDP(I) (\$2,871m in current value terms).

## National capital account

The national capital account shows how the saving from the national income and outlay account and consumption of fixed capital (depreciation) is used to finance gross fixed capital expenditure. If, as is currently the case for Australia, the nation's saving and consumption of fixed capital are not sufficient to pay for all the capital equipment needed for Australian production, the shortfall must be borrowed from overseas. The amount borrowed from overseas is shown in the national capital account as a negative entry for net lending to overseas.

Tables 29.12 and 29.13 show the national capital account for a number of years between 1963–64 and 1996–97; table 29.12 shows a series of snapshots at five-yearly intervals to 1983–84, while table 29.13 shows annual time series from 1988–89 to 1996–97.

**29.12 NATIONAL CAPITAL ACCOUNT—Five-Yearly**

	1963–64	1968–69	1973–74	1978–79	1983–84
	\$m	\$m	\$m	\$m	\$m
Consumption of fixed capital	2 302	3 688	6 910	16 077	29 940
Saving					
Household	1 304	1 706	5 189	8 558	12 505
General government surplus on current transactions	418	850	1 449	-1 898	-5 183
Extraordinary insurance claims paid	—	—	88	—	0
Other	728	1 134	704	540	1 462
<b>Finance of gross accumulation</b>	<b>4 752</b>	<b>7 378</b>	<b>14 340</b>	<b>23 277</b>	<b>38 724</b>
Gross fixed capital expenditure					
Private	3 175	5 213	9 125	18 377	30 173
Public enterprises	746	1 187	1 897	4 091	8 839
General government	734	1 135	1 908	3 516	5 313
Increase in stocks					
Private non-farm	186	294	590	335	-411
Farm and public authorities	-66	388	576	1 008	1 787
Statistical discrepancy	-78	-96	833	-1 110	78
Net lending to overseas	55	-743	-589	-2 940	-7 055
<b>Gross accumulation</b>	<b>4 752</b>	<b>7 378</b>	<b>14 340</b>	<b>23 277</b>	<b>38 724</b>

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

**29.13 NATIONAL CAPITAL ACCOUNT—Annual**

	1988–89	1989–90	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Consumption of fixed capital	51 372	55 997	58 294	59 814	62 779	65 166	66 799	69 530	72 407
Saving									
Household	11 412	13 596	11 383	10 437	7 289	6 034	9 137	10 835	15 849
General government surplus on current transactions	7 880	7 796	1 659	-11 313	-15 891	-14 334	-9 210	-3 693	3 397
Extraordinary insurance claims paid	—	654	—	—	—	—	—	—	—
Other	4 542	-1 721	-4 284	1 290	9 483	15 681	11 580	9 956	3 068
<b>Finance of gross accumulation</b>	<b>75 206</b>	<b>76 322</b>	<b>67 052</b>	<b>60 228</b>	<b>63 660</b>	<b>72 547</b>	<b>78 306</b>	<b>86 628</b>	<b>94 721</b>
Gross fixed capital expenditure									
Private	67 198	67 817	60 419	56 762	62 941	69 829	77 017	79 991	86 304
Public enterprises	10 407	13 128	12 177	11 789	10 355	9 587	11 447	10 788	9 285
General government	7 484	8 638	8 873	8 939	9 435	9 080	9 462	9 507	9 945
Increase in stocks									
Private non-farm	3 170	2 201	-2 591	-1 803	444	1 416	3 483	2 771	1 091
Farm and public authorities	331	3 002	1 042	-374	38	-183	-902	-532	-2 501
Statistical discrepancy	3 889	3 271	1 771	-3 987	-5 555	-2 668	2 203	361	4 373
Net lending to overseas	-17 273	-21 735	-14 639	-11 098	-13 998	-14 514	-24 404	-16 258	-13 776
<b>Gross accumulation</b>	<b>75 206</b>	<b>76 322</b>	<b>67 052</b>	<b>60 228</b>	<b>63 660</b>	<b>72 547</b>	<b>78 306</b>	<b>86 628</b>	<b>94 721</b>

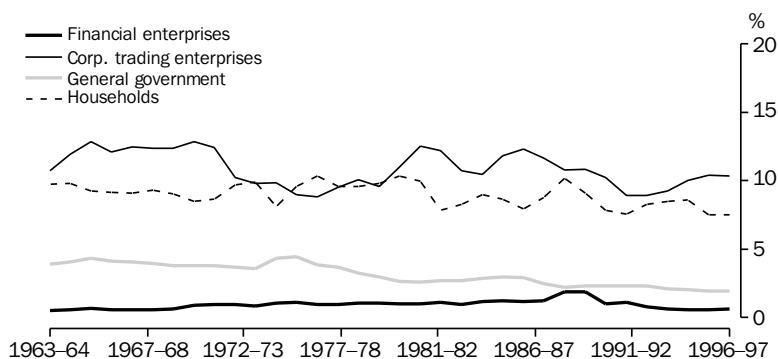
Source: Australian National Accounts: National Income, Expenditure and Product (5204.0 and 5206.0).

Graph 29.14 shows gross fixed capital expenditure (investment) by institutional sector as a proportion of GDP(I). This proportion for corporate trading enterprises fell during the 1970s and then rose to a peak of 12.5% in 1981–82. It subsequently trended down to 10.4% in 1996–97. Household investment as a proportion of GDP(I) has fallen from 10.2% in 1988–89 to 7.5% in 1996–97. While general government investment as a proportion of GDP(I) peaked at 4.4% in 1975–76, it has fallen steadily since then and in 1996–97 it was 1.9% of GDP(I).

Graph 29.15 shows net lending by institutional sector as a proportion of GDP(I). A positive percentage for a sector indicates that it is a net lender to other sectors of the economy. A negative percentage indicates that it is a net borrower from other sectors (including the rest of the world). As shown in the graph, the household sector has been

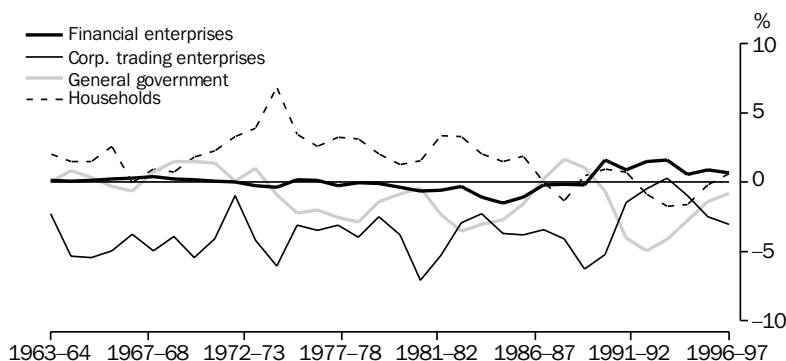
a net lender to the other sectors of the economy for all years except 1967–68, 1988–89 and 1992–93 to 1995–96 when it was a net borrower. As a proportion of GDP(I), net lending by households was 0.6% in 1996–97. Except for 1993–94, corporate trading enterprises have been net borrowers over the whole period from 1963–64 to 1996–97 and the amounts borrowed have fluctuated significantly from year to year. As a proportion of GDP(I), net borrowing by corporate trading enterprises was 3.0% in 1996–97. After being a net lender for the period 1987–88 to 1989–90, general government has returned to being a net borrower over the past seven years, with significant amounts recorded in the early part of the 1990s. Expressed as a proportion of GDP(I), general government net borrowing peaked at 4.9% in 1992–93. In 1996–97 net borrowing was 0.6% of GDP(I).

**29.14 GROSS FIXED CAPITAL EXPENDITURE, By Sector—Share of GDP(I)**



Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

**29.15 NET LENDING, By Sector—Share of GDP(I)**



Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

## Overseas transactions account

The overseas transactions account is derived from the detailed balance of payments current account (see *Chapter 30, International accounts and trade*). It includes all transactions in the balance of payments current account except reinvested earnings. It shows Australia's exports and imports, incomes and unrequited transfers received by Australian residents from overseas, and incomes and unrequited transfers paid to

overseas by Australian residents. The balance is net lending to overseas. This is the same as the balance in the national capital account.

Tables 29.16 and 29.17 show the overseas transactions account for a number of years between 1963–64 and 1996–97; table 29.16 shows a series of snapshots at five-yearly intervals to 1983–84, while table 29.17 shows annual time series from 1988–89 to 1996–97.

**29.16 OVERSEAS TRANSACTIONS ACCOUNT—Five-Yearly**

	1963–64	1968–69	1973–74	1978–79	1983–84
	\$m	\$m	\$m	\$m	\$m
Imports of goods and services	2 846	4 255	7 893	17 978	31 304
Interest, dividends, etc. to overseas	302	478	871	1 875	5 989
Labour income to overseas	7	12	28	72	158
Unrequited transfers to overseas	151	252	556	961	1 643
Net lending to overseas	55	–743	–589	–2 940	–7 055
<b>Use of current receipts</b>	<b>3 361</b>	<b>4 254</b>	<b>8 759</b>	<b>17 946</b>	<b>32 039</b>
Exports of goods and services	3 149	3 887	7 890	16 893	28 773
Interest, dividends, etc. from overseas	69	114	410	340	1 258
Labour income from overseas	5	10	32	92	175
Extraordinary insurance claims from overseas	—	—	51	—	75
Unrequited transfers from overseas	138	243	376	621	1 758
<b>Current receipts from overseas</b>	<b>3 361</b>	<b>4 254</b>	<b>8 759</b>	<b>17 946</b>	<b>32 039</b>

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0 and 5206.0).

**29.17 OVERSEAS TRANSACTIONS ACCOUNT, Annual**

	1988–89	1989–90	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Imports of goods and services	60 734	67 007	65 220	67 439	77 400	83 496	95 680	99 107	101 691
Interest, dividends, etc. to overseas	15 501	20 341	21 020	19 000	17 197	17 225	19 246	21 647	22 375
Labour income to overseas	279	406	429	326	311	283	389	458	539
Unrequited transfers to overseas	2 296	2 467	2 524	2 461	2 566	2 961	3 013	2 769	2 688
Net lending to overseas	–17 273	–21 735	–14 639	–11 098	–13 998	–14 514	–24 404	–16 258	–13 776
<b>Use of current receipts</b>	<b>61 537</b>	<b>68 486</b>	<b>74 554</b>	<b>78 128</b>	<b>83 476</b>	<b>89 451</b>	<b>93 924</b>	<b>107 723</b>	<b>113 517</b>
Exports of goods and services	55 110	60 625	65 988	69 753	76 465	82 531	87 090	98 528	104 601
Interest, dividends, etc. from overseas	2 034	2 898	3 317	3 514	3 694	3 487	3 258	4 793	4 110
Labour income from overseas	225	370	432	455	497	511	551	610	678
Extraordinary insurance claims from overseas	—	150	150	—	—	—	—	—	—
Unrequited transfers from overseas	4 168	4 443	4 667	4 406	2 820	2 922	3 025	3 792	4 128
<b>Current receipts from overseas</b>	<b>61 537</b>	<b>68 486</b>	<b>74 554</b>	<b>78 128</b>	<b>83 476</b>	<b>89 451</b>	<b>93 924</b>	<b>107 723</b>	<b>113 517</b>

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0 and 5206.0).

Australia has generally been a net borrower of capital from overseas. In the national accounts, this situation is reflected by a negative value for net lending to overseas. Australia was actually a net lender to overseas in 1963–64 and 1972–73. Net borrowing from overseas, expressed as a proportion of GDP(I), increased significantly during the early 1980s and has remained at relatively high levels since then. Graph 29.18 shows this proportion since 1963–64.

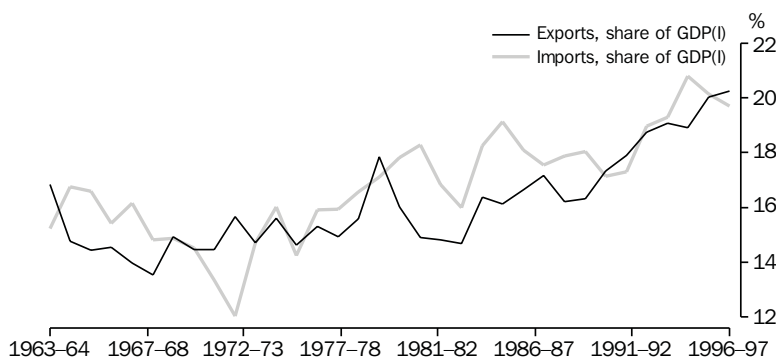
The importance of foreign trade to the Australian economy is illustrated by graph 29.19, which shows the ratios of exports and imports of goods and services to GDP(I) for the financial years 1963–64 to 1996–97. In 1996–97, the import ratio was 19.7% and the export ratio was 20.3%.

**29.18 NET LENDING TO OVERSEAS, Share of GDP(I)**



Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

**29.19 EXPORTS AND IMPORTS, Share of GDP(I)**



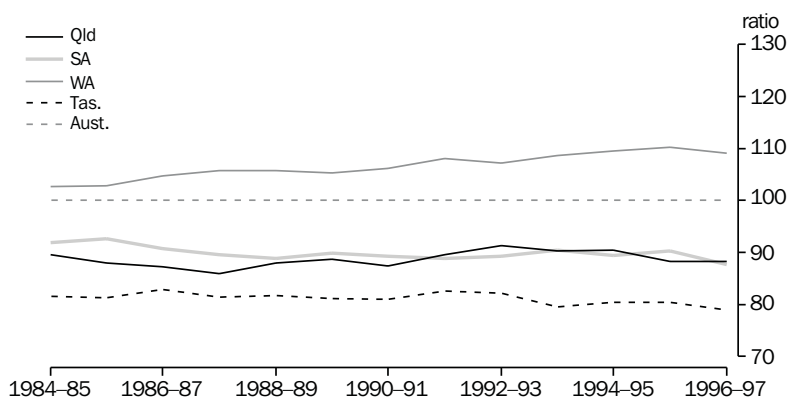
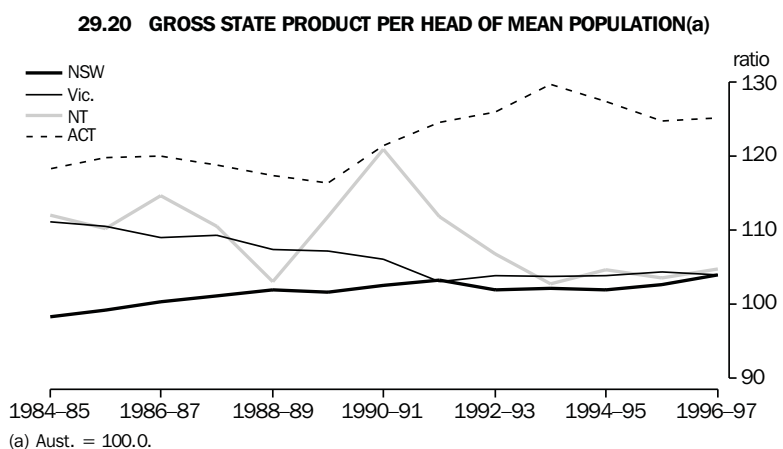
Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

## State accounts

As well as Australia's national accounts, the ABS produces State accounts for each of Australia's States and Territories each year. These provide estimates of Gross State Product (GSP) and State final demand. GSP is produced by summing the incomes generated in the production process (the income approach to measuring total production). State final demand is equal to the sum of private and government final consumption expenditure and gross fixed capital expenditure. Estimates of State final demand and GSP are available in both current and constant prices. The constant price GSP estimates are experimental.

An important use of State accounts is to compare the performance of each State and Territory. Graph 29.20 shows the ratio of GSP, in current prices, per head of mean population for each State and Territory to the Australian value (GDP(I) per head of mean population) since 1984–85.

GSP per head of mean population in 1996–97 was above the national average for New South Wales, Victoria, Western Australia, the Northern Territory and the Australian Capital Territory. GSP per head of mean population has been below the national average for the whole length of the time series (i.e. since 1984–85) for Queensland, South Australia and Tasmania.



Source: Australian National Accounts: State Accounts (5220.0).



## Input-output tables

### Basic structure

Input-output (I-O) tables show the structure of a country's entire production system for a particular period, usually one year. They show which goods and services are produced by each industry and how they are used (e.g. some goods, such as cars, are sold to final consumers while others, such as steel, are used as inputs by other industries in producing more goods and services). The tables are based on the principle that the value of the output of each industry can be expressed as the sum of the values of all the inputs to that industry plus any profits made from production plus any indirect taxes paid less any subsidies received. All the goods and services produced in a period are identified as being used as inputs by industries in their production process, being sold to final users of the goods and services (either in Australia, or overseas as exports), or contributing to the change in stocks (an increase in stocks if more goods are produced than purchased or a run-down in stocks if purchases exceed production). For the production system as a whole, the sum of all outputs must equal the sum of all inputs and, for the economy as a whole, total supply must equal total demand (stocks provide the mechanism which balances supply and demand).

### Relationship to the national income and expenditure accounts

I-O tables can be directly related to the domestic production account. The income side of the domestic production account shows the amount of income generated in the economy accruing to labour (in the form of wages, salaries and supplements) and to capital (as profits or, in national accounting terms, gross operating surplus). The expenditure side of the account shows the value of goods and services entering into the various categories of final demand.

The I-O tables provide a much more detailed disaggregation of the domestic production account than is available in the national income, expenditure and product accounts. The latter only shows details of the end results of economic activity, whereas the I-O tables show the flows of goods and services through the production process. The extra detail provided by the I-O tables is essential for many analyses.

### Input-output table for seven industry sectors

Table 29.21 and diagram 29.22 show the flows of goods and services in respect of 1993–94.

The links between the table and the diagram are explained by working through the following formulas.

*Intermediate usage* (\$349,855m) in the diagram is derived by summing from column 8 of the table: Intermediate usage (\$302,794m); Sales by final buyers (\$1,335m); Competing imports c.i.f. (\$43,251m); and Complementary imports c.i.f. (\$2,475m).

*Gross value added* (\$429,539m) in the diagram is derived by summing from column 14 of the table: Wages, salaries and supplements (\$194,981m); Gross operating surplus (\$183,311m); and taxes: Commodity taxes (net) (\$28,517m), Indirect taxes n.e.c. (net) (\$19,983m) and Duty on competing imports (\$2,747m).

*Domestic production* (\$779,394m) in the diagram is derived by summing: Intermediate usage from column 8 of the table (\$302,794m); total final demand at basic values from column 13 (\$453,893m); and the indirect taxes payable on those final demand items (see column 13): Commodity taxes (net) (\$18,298m), Indirect taxes n.e.c. (net) (\$2,688m) and Duty on competing imports (\$1,721m).

*Imports* (\$84,578m) in the diagram is derived by summing from column 14 of the table: Competing imports c.i.f. (\$84,956m) and Complementary imports c.i.f. (-\$378m).

*Total supply* (\$863,972m), which must equal total demand, is the sum of Domestic production (\$779,394m) and Imports (\$84,578m).

*Domestic final demand* (\$430,888m) in the diagram is derived from the table by subtracting total Exports (\$83,229m), column 12, from total Final demand (\$514,117m), column 13.

*Exports* (\$83,229m) in the diagram is total exports, column 12, in the table.

*Total demand* (\$863,972m), which must equal total supply, is the sum of Domestic final demand (\$430,888m), Intermediate usage (\$349,855m), and Exports (\$83,229m).

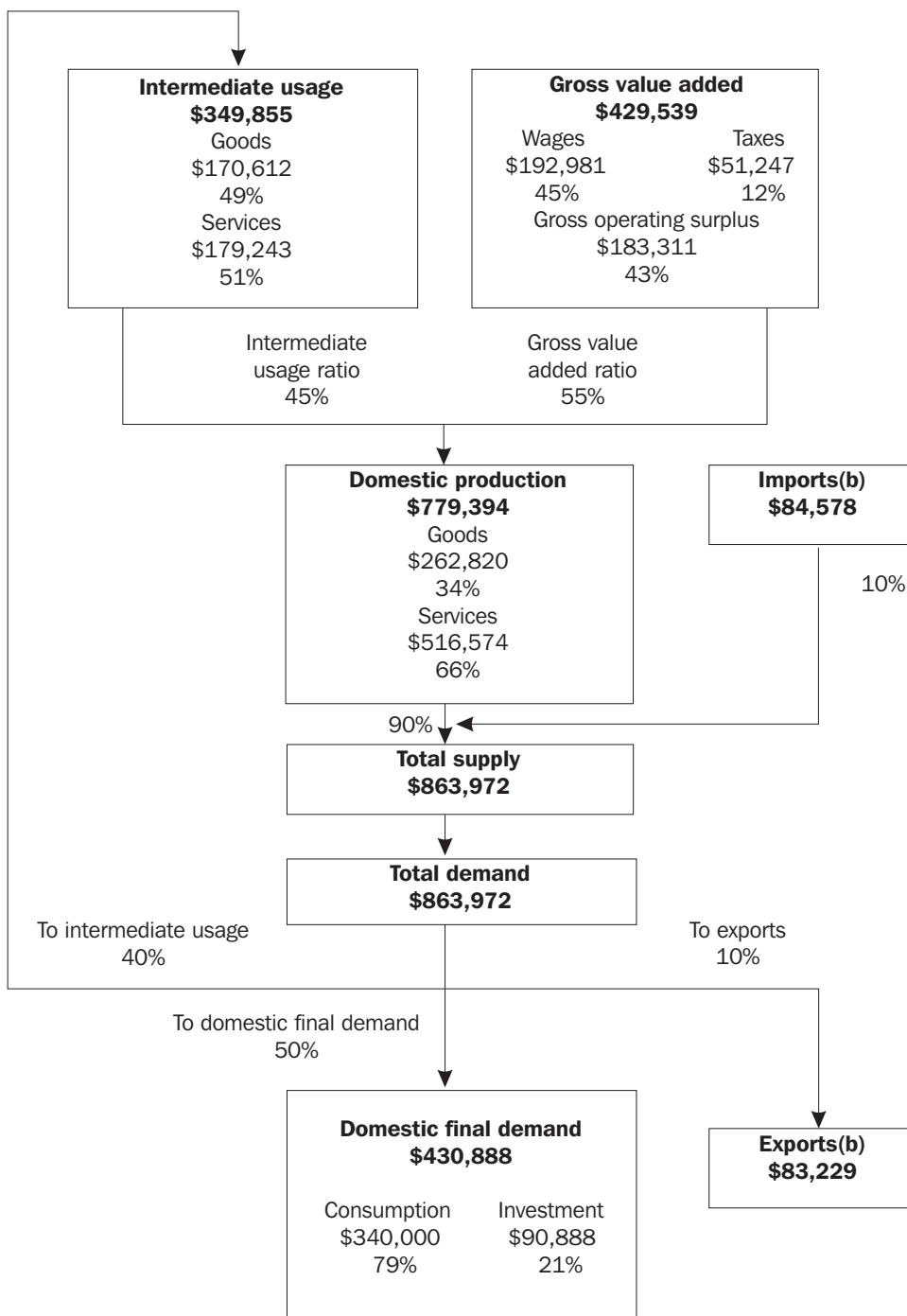
## 29.21 INDUSTRY BY INDUSTRY FLOW MATRIX, Basic Values—1993–94

	1	2	3	4	5	6	7
	Agriculture	Mining	Manufacturing	Construction	Trade and transport	Service industries	Public admin. and defence
Supply	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Agriculture	2 550	25	13 615	57	32	1 118	74
Mining	46	3 662	9 163	384	106	1 821	120
Manufacturing	3 619	2 168	45 830	13 419	11 496	16 297	4 369
Construction	214	239	45	44	245	1 619	818
Trade and transportation	2 126	1 195	14 400	3 257	6 561	9 277	1 990
Service Industries	2 948	4 128	14 746	6 788	27 760	57 974	9 320
Public admin. and defence	67	27	665	178	494	1 062	4 640
Intermediate usage	11 569	11 444	98 463	24 126	46 695	89 168	21 330
Wages, salaries, supplements	3 261	4 834	29 810	12 056	32 398	97 740	14 883
Gross operating surplus	9 510	14 221	26 024	12 072	28 581	91 381	1 522
Commodity taxes (net)	744	269	2 017	407	3 289	3 503	-11
Indirect taxes n.e.c. (net)	643	370	2 274	563	3 400	10 049	-4
Sales by final buyers	—	5	1 289	1	—	39	—
Competing imports c.i.f.(a)	1 280	1 589	21 622	2 613	4 529	9 495	2 124
Duty on competing imports	25	38	595	114	70	184	—
Complementary imports c.i.f.(a)	76	93	737	148	338	856	228
Duty on complementary imports	—	—	—	—	—	—	—
<b>Australian production</b>	<b>27 107</b>	<b>32 864</b>	<b>182 830</b>	<b>52 100</b>	<b>119 300</b>	<b>302 415</b>	<b>40 071</b>
	8	9	10	11	12	13	14
	Intermediate usage = Sum (1 to 7)	Final consumption expenditure	Gross fixed capital expenditure	Increase in stocks	Exports	Final demand = Sum (9 to 12)	Total supply = Sum (8+13)
Supply	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Agriculture	17 471	3 879	32	192	5 534	9 636	27 107
Mining	15 301	623	226	-1 380	18 094	17 562	32 864
Manufacturing	97 199	40 837	15 499	-210	29 506	85 632	182 830
Construction	3 224	1 697	47 132	2	46	48 876	52 100
Trade and transportation	38 804	57 017	8 240	383	14 856	80 496	119 300
Service Industries	123 663	171 362	3 091	—	4 299	178 751	302 415
Public admin. and defence	7 132	32 585	181	—	174	32 940	40 071
Intermediate usage	302 794	308 000	74 399	-1 014	72 507	453 893	756 687
Wages, salaries, supplements	194 981	—	—	—	—	—	194 981
Gross operating surplus	183 311	—	—	—	—	—	183 311
Commodity taxes (net)	10 219	14 716	2 838	95	650	18 298	28 517
Indirect taxes n.e.c. (net)	17 295	—	2 688	—	—	2 688	19 983
Sales by final buyers	1 335	3 550	-4 730	-281	126	-1 335	—
Competing imports c.i.f.(a)	43 251	15 677	14 837	1 245	9 946	41 705	84 956
Duty on competing imports	1 026	928	837	-45	—	1 721	2 747
Complementary imports c.i.f.(a)	2 475	-2 871	34	-16	—	-2 853	-378
Duty on complementary imports	—	—	—	—	—	—	—
<b>Australian production</b>	<b>756 687</b>	<b>340 000</b>	<b>90 903</b>	<b>-15</b>	<b>83 229</b>	<b>514 117</b>	<b>1 270 804</b>

(a) Including charges for insurance and freight.

Source: Derived from Australian National Accounts: Input-Output Tables (5209.0).

## 29.22 THE AUSTRALIAN ECONOMY, Flow of goods and services(a)—\$ million



Notes: (a) Flows are based on 1993–94 Input-Output tables. (b) Includes re-exports.

Source: Australian National Accounts: Input-Output Tables (5209.0).

## Financial accounts

In addition to the national accounts, the ABS produces quarterly information on the level of financial assets and liabilities of each institutional sector of the economy, the market for financial instruments and inter-sectoral transactions in financial assets and liabilities classified by financial instrument (see *Chapter 26, Financial system*).

## National balance sheet

The national balance sheet provides estimates of the value of Australia's produced, non-produced and financial assets, our liabilities to the rest of the world and the country's net worth (defined as the difference between total assets and liabilities, including the value of equity in Australian enterprises owned by non-residents) for the total economy. The latest edition of the balance sheet (which is in respect of 30 June 1996) provides a balance sheet for each of the four domestic sectors: households (and unincorporated enterprises), general government, financial corporations and non-financial corporations. This edition of the national balance sheet is published in *Australian National Accounts: National Balance Sheet* (5241.0).

The non-produced assets included in the balance sheet cover experimental estimates of the value of some of Australia's natural resources: sub-soil assets, timber available for log production and land. The monetary estimates of natural resources contained in the balance sheet are underpinned by a dataset of physical estimates of particular natural resources. The monetary estimates of the natural resources should be considered in conjunction with the physical estimates provided. Valuation of natural resources is a difficult and contentious undertaking. The ABS continues to work with agencies, in Australia and abroad, to explore the best approaches to the measurement of the physical resources as well as the valuation of these resources, but it will be some time before there is an agreed approach. It is for this reason that the estimates of natural resources presented in the balance sheet are considered to be experimental.

The natural resource estimates are used to monitor the availability and exploitation of these resources and to assist in the formulation of environmental policies. More generally, data on the level, composition and change in assets and liabilities shown in the balance sheet indicate the extent of economic resources available to and claims on a nation and each of its institutional sectors.

Sectoral balance sheets provide information necessary for analysing a number of topics. Examples include: determining household liquidity; and the computation of widely used ratios, such as assets to liabilities, net worth to total liabilities, non-financial to financial assets, debt to income etc. In a period of concern about the level of saving in Australia, national and sector balance sheets provide additional information on the relationships between consumption, saving and wealth accumulation.

The ABS will continue to develop estimates of the value of Australia's assets for inclusion in national balance sheets as additional data become available. Estimation techniques will be refined as research in Australia and abroad explores issues relating to the valuation of natural resources. Similarly, improvements in the valuation of produced and financial assets and liabilities will be included in the balance sheets as they become available. In addition, under the 1993 edition of *System of National Accounts* (SNA93) (for a brief description see the article at the beginning of this chapter) the definition of an asset has been extended. Accordingly, estimates of the value of various non-financial tangible produced assets (such as certain defence expenditure) and intangible produced assets (including mineral exploration and computer software) will be included in the balance sheet, as well as in the production account.

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## Introduction

This chapter presents statistics on Australia's international accounts, covering exports and imports of goods, international trade in services, international investment transactions, and the levels of Australia's foreign financial assets and liabilities.

These statistics are used by economic analysts and policy advisers to monitor, evaluate and forecast developments in Australia's external trade and external sector accounts for the purposes of domestic and international macro-economic analysis and policy determination. They are also used by governments, government agencies, businesses, industry associations, research institutions and others to analyse patterns of trade and assess particular types of transactions and financial claims and liabilities between Australian residents and non-residents, for purposes such as trade promotion and negotiations, market and industry performance studies, etc.

Transaction changes measured in the financial account of the balance of payments are identical to the transactions measured in the international investment position.

## International accounts

International accounts statistics cover the closely related and integrated statistics on Australia's balance of payments and international investment position. Diagram 30.1 presents the broad structure and relationship of these statistics.

Australia's balance of payments provides a statistical statement that systematically summarises the economic transactions between residents of Australia and residents of other countries. 'Residents', who may be people or businesses, need not be Australian nationals. Transactions cover the provision (changes in ownership) of goods, services, income, and financial claims on and liabilities to the rest of the world, and entries (such as gifts) classified as transfers that offset the provision of real and financial resources without anything provided in exchange.

Statistics about Australia's international investment position provide the balance sheet of the stock of foreign financial assets and liabilities of Australian residents. They integrate the balance sheet positions with information on increases and decreases in the levels of these assets and liabilities as a result of the changes due to transactions (investment flows, including reinvestment of earnings) as shown in the financial account of the balance of payments, together with the other changes that affect either the value of the stock (price, exchange rate) or the volume (other adjustments) of the stock of financial assets and liabilities.

### 30.1 RELATIONSHIP BETWEEN THE BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION STATEMENTS

#### Balance of Payments


## Foreign ownership in Australia

Statistics of foreign ownership in Australia presented in this chapter use levels data from Australia's international investment position to estimate the foreign ownership of equity in Australian enterprises.

## International merchandise trade

International merchandise trade statistics cover all movable goods which add to (imports) or subtract from (exports) Australia's stock of material resources. The statistics are compiled from information submitted by importers and exporters to the Australian Customs Service. Some goods are excluded for conceptual or practical reasons, for example those goods temporarily brought to Australia for subsequent forwarding to foreign destinations, and low-value imports and exports in the parcel post system.

The data about merchandise exports and imports are used in the compilation of the balance of payments. However, various adjustments relating to coverage, timing, classification and (for imports only) valuation are necessary before international merchandise trade statistics can be put on a balance of payments basis. Therefore, the merchandise exports and imports statistics, and the excess of exports (+) or imports (–), shown in the *International trade* section of this chapter, will differ from those shown in the *International accounts* section.

## International accounts

### Conceptual framework

Australia's international accounts statistics, which cover both the balance of payments and the international investment position, are compiled in accordance with international statistical standards. The concepts of residency, transactions, valuation and time of recording are common to the balance of payments and international investment position statistics.

The balance of payments accounts, which present systematically the economic transactions between Australia and the rest of the world, incorporate four types of economic transactions. The first involves the provision of real resources (i.e. transactions in goods, services and income). The second involves the provision of financial resources (i.e. foreign financial assets and

liabilities). The third covers those one sided transactions of a current nature (described as current transfers) that are offsets to transactions in current real or financial resources that are undertaken without an exchange. Current resources are not associated with, nor finance, fixed assets. For example, famine relief, whether in cash or in kind, would have its offset in current transfers. The fourth type is capital transfers that offset transactions which are undertaken, without exchange, in fixed assets or in their financing (such as development aid). For example, migrants' funds represent the shift of the migrants' net worth to or from Australia, and are classified as capital transfers.

The first and third of these types of transactions comprise the current account, while the second type comprises the financial account. The fourth type (capital transfers), together with a minor item for the acquisition and disposal of non-produced, non-financial assets (such as patents), comprises the capital account.

The double entry accounting system is used for recording balance of payments transactions. Under this system, credit entries, which are shown with no arithmetic sign, are used to record the provision of real or financial resources. Credit entries are therefore required for exports of goods and services, and for income earned by residents (a return for providing the use of financial capital to non-residents, or for providing the labour of Australian residents). Credit entries are also required for providing financial resources to the rest of the world, either as new liabilities (such as issuing bonds), or through returning existing foreign assets (such as selling foreign equity securities to non-residents). Therefore, any credit entry in the financial account will reflect either an increase in Australia's foreign liabilities (more foreign debt or foreign ownership), or a decrease in Australia's foreign financial assets (such as a run-down in foreign exchange reserves).

Conversely, debit entries, which are identified by a minus sign (–), are used to record the provision by the rest of the world of real or financial resources to Australia, and are shown against imports of goods and services, income earned from Australia by non-residents, and financial transactions involving either an increase in foreign financial assets or a decrease in foreign liabilities.

Transactions in a double entry accounting system are reflected in pairs of equal credit and debit entries. For example, an export transaction for which payment is received through the banking system involves a credit entry for providing the good to a non-resident and a debit entry for being provided with foreign exchange assets due as payment for the export. Any entries that are not automatically paired in a transaction (i.e. for which there is no 'quid pro quo') are matched by special offsetting entries. Such offsetting entries are made in the categories 'current transfers' (when offsetting the provision of current resources such as food for famine relief) and 'capital transfers' (when offsetting the provision of capital resources such as development aid to build a new dam).

In principle, the net sum of all credit and debit entries is zero. In practice, some transactions are not measured accurately (errors), while others are not measured at all (omissions). Equality between the sums of the credit and debit entries is then brought about by the inclusion of a 'net errors and omissions' item which balances the accounts.

Transactions and other changes should be valued in the balance of payments at market prices. However, for practical reasons, transactions are generally valued in the statistics at transaction prices as this basis provides the closest practical approximation to the market price principle.

Transactions and other changes recorded in the balance of payments should be recorded at the time of change of ownership (either actual or imputed). For current account transactions, this occurs when ownership of goods changes, or services are provided. Investment income is recorded on a full accrual basis, that is, when it is earned. Reinvested earnings are calculated for the earnings of the period of account, using current replacement cost estimates of depreciation and excluding holding gains and losses. Current and capital transfers should be recorded when the goods, services, cash, etc., to which they are offsets, change ownership. Those transfers, such as taxes and fines, which are imposed by one party on another, should ideally be recorded at the time of the occurrence of the underlying transactions or other flows or events that give rise to the liability to pay. For the financial account transactions, the time of recording is at the change of ownership of the financial claims, which by convention is the time at which transactions are entered in the books of the transactors.

In practice, the nature of the available data sources is such that the time of recording of transactions will often differ from the time of change of ownership. Where practical, timing adjustments are made for transactions to ensure that they are recorded in the time period in which change of ownership occurs.

International investment position statistics provide information on the levels (stock) of Australia's foreign financial assets and liabilities. The investment position at the end of a period reflects the foreign financial asset and liability positions at the start of the period, and the financial transactions (investment flows) from the balance of payments which increase or decrease these assets and liabilities, together with the non-transaction changes due to exchange rate effects, other price effects and changes in the volume of these assets and liabilities that are not due to transactions (such as debt write-off).

While the international investment position statistics form an integral part of Australia's balance of payments (see diagram 30.1), they are also useful in their own right, for example in determining the impact of foreign investment policies and the level of Australia's foreign assets and liabilities, including foreign debt. They are also useful when analysing the behaviour of financial markets.

As with the balance of payments, market price is the principal method of valuation in international investment position statistics, and financial assets and liabilities are recognised on a change of ownership basis, that is, at the time when the foreign financial asset or liability is acquired, sold, repaid or otherwise disposed of. By convention, this is generally taken to be the time at which the event is recorded in the books.

## Classifications

In the following tables, global estimates of the current, capital and financial accounts of Australia's balance of payments are presented. Current and capital account transactions are generally recorded gross. This means that, for each item in the current and capital accounts, the credit entries are recorded separately from the debit entries. For example, goods credits are shown separately from goods debits. For each item in the financial account, however, debit and credit transactions are combined to produce a single result for the item which may be either a net credit or a net debit. For example, in a given period, non-resident purchases of shares issued

by companies in Australia (credit) are netted against sales of Australian shares to residents by non-residents (debit) and the net result is recorded in the financial account as either a net credit or a net debit.

The current account records transactions between Australian residents and non-residents in goods, services, income and current transfers. Goods are classified into five main components—general merchandise; goods for processing; goods procured in ports by carriers; repairs on goods; and non-monetary gold. Changes of ownership from residents to non-residents are recorded as credits (also referred to as exports), and changes from non-residents to residents are recorded as debits (also referred to as imports). Services, comprising 11 primary components, cover services provided by Australian residents to non-residents (credits) and by non-residents to residents (debits), together with transactions in a few types of goods (for example, goods purchased by travellers). Income, comprising investment income (for example, dividends and interest) and compensation of employees (for example, wages), covers income earned by Australian residents from non-residents (credits) or earned by non-residents from residents (debits). Current transfers cover the offsetting entries required when resources are provided, without something of economic value being received in return. When non-residents provide something to Australian residents, offsetting credits are required; when residents provide resources to non-residents, offsetting debits are required. General government transfers (for example, official foreign aid) are distinguished from transfers by other sectors.

The capital account covers capital transfers (such as migrants' funds), distinguished between general government and other sectors, and the acquisition/disposal of non-produced, non-financial assets.

The financial account shows transactions in foreign financial assets and liabilities. The primary split is by functional type of capital (direct investment, portfolio investment, other investment and reserve assets) further split into assets and liabilities (where appropriate). Within the asset and liability categories, details are presented of instruments of investment and resident sectors (for other than direct investment), and in some cases the contractual maturity of the instruments used.

The primary distinction used in international investment position statistics is between assets and liabilities. Assets primarily represent Australian investment abroad, and liabilities represent foreign investment in Australia. The difference between the two represents the net international investment position (see graph 30.11 and table 30.12). Australian investment abroad refers to the stock of foreign financial assets owned by Australian residents, after netting off any liabilities of Australian direct investors to their direct investment enterprises abroad. Conversely, foreign investment in Australia refers to the stock of financial assets in Australia owned by non-residents, after netting off any claims of Australian direct investment enterprises on their foreign direct investors. The first breakdown below this asset/liability dichotomy is by functional type of capital, with details of the instruments of investment (see table 30.14), the resident sectors and contractual maturities involved.

While many types of instruments of investment can be identified, for analytical reasons and ease of reporting, similar instruments are combined. Some of those instruments are:

- Equity capital, which includes ordinary and participating preference shares, units in trusts and net equity in branches.
- Reinvestment of earnings of direct investors, which refers to income retained within the enterprise from after-tax profits that is attributable to direct investors.
- Debt securities, which include longer term, generally tradeable security instruments such as bonds and debentures, with a contractual maturity of more than one year after issue, together with money market instruments (for example, bills, commercial finance paper, negotiable certificates of deposit) with a contractual maturity of one year or less.
- Trade credits cover the direct extension by suppliers and buyers for goods and services, including advances for work in progress or to be undertaken.
- Loans cover the direct lending of funds either without a security evidencing the transaction, or with non-negotiable documentation. They include financial leases.
- Deposits comprise both transferable and other deposits.
- Other assets and liabilities consist of miscellaneous accounts in respect of interest, dividends, etc.

## Impact of changes in international standards on Australia's international accounts

The ABS is progressively upgrading its macro-economic statistics to incorporate new international statistical standards. Commencing in November 1997 with the re-release of June quarter 1997 international accounts, Australia's balance of payments (BOP) and international investment position (IIP) statistics were upgraded to the new statistical standards contained in the fifth edition of the *Balance of Payments Manual* (BPM5) promulgated by the International Monetary Fund. Statistics in the 1998 edition of *Yearbook Australia* incorporated data presented on a BPM5 basis.

In November 1998, the ABS re-released the June quarter 1998 national accounts compiled under new standards (*System of National Accounts* (SNA93)). Both SNA93 and BPM5 have been developed by the international statistical community with a primary objective of achieving, to the extent possible, full consistency between the standards set for national and international accounts statistics. Therefore, from the September quarter 1998, all of Australia's BOP and IIP statistics are fully consistent with statistics for the rest of the world in the national accounts. This was the first time that the statistics have attained full consistency.

Because of the timetable for this edition of *Year Book Australia*, the data presented here for both the national and international accounts do not yet reflect the changes required to meet SNA93. Those changes will be incorporated in next year's edition.

The changes result in a comprehensive set of international accounts statistics that provide for meaningful analysis, enhance the international comparability of Australia's BOP and IIP statistics and achieve harmonisation of statistical concepts, definitions, statistical units, classifications and terminology. A detailed assessment of the changes required to meet BPM5 standards, and some of the changes required for SNA93, can be obtained from the ABS Information Paper *Upgraded Balance of Payments and International Investment Position Statistics* (5365.0). Below is a summary of the major BPM5 changes and their impacts,

together with the more significant changes to international accounts statistics that have been required to meet SNA93.

## BPM5 changes

General changes include:

- A new structure and classification of the accounts, incorporating financial transactions in a renamed financial account, and introducing a new capital account for recording separately both capital transfers and transactions in non-produced, non-financial assets.

Other changes are listed separately for each account.

## Goods and services

- Many additional service categories have been identified in standard presentations.
- Royalties and licence fees have been reclassified from income into services.
- There is an improved method of measuring international insurance services.
- Certain goods crossing the customs frontier for processing and re-export or re-import, that do not change ownership, are recorded gross.
- Estimates are included of the implicit net fees earned by residential financial intermediaries in foreign exchange trading with non-residents.

## Income

- Royalty and copyright payments are reclassified from income to services.
- Extraordinary insurance claims related to catastrophes, such as earthquakes and cyclones, are excluded from income and included in current transfers.
- Imputed investment income is included, both on the element of prepayment in insurance premiums and on outstanding claims.
- For investment income there is a change from a due for payment basis to an accrual measure.

## Current transfers

- This is a new account that excludes capital transfers such as migrant's transfers and certain of Australia's foreign aid transfers.



- Australia's contributions to a range of international organisations are now classified as current transfers rather than as a financial claim.
- The changed treatment of insurance transactions has a significant impact on current transfers.

### Capital account

- This new account primarily comprises capital transfers, including migrants' transfers and certain aid flows from the former item 'unrequited' transfers.
- It also includes the acquisition (less disposal) of non-produced non-financial assets, relating to the sale of patents, copyrights, etc. and certain transactions in embassy land.

### Financial account

- This is a renaming of the former capital account, but the structure and details are significantly different.
- The definition of direct investment excludes normal banking transactions between affiliated financial intermediaries.
- A maturity dissection, based on original contractual maturity, is introduced for much of the other investment category.
- The definition of debt has been expanded to include all non-equity assets and liabilities.
- In addition to the standard presentation, on a net basis, of transactions and positions in direct investment debt assets and liabilities, these are now also recorded on a gross basis.
- Cross-border transactions in financial derivatives are included, from reference year 1994–95.

### International investment position

- BPM5 is the first edition to include standards for the structure and compilation of the IIP.
- The BOP changes to the financial account in terms of structure, measurement of debt and inclusion of financial derivatives apply equally to the IIP.
- The IIP reconciliation format now provides the separate identification of price changes.

### Impacts

Many of the changes above, while providing enhanced detailed analysis of the accounts,

have little or no net effect on the overall account balances. Those that do have a significant effect are quantified below for 1996–97, the last year compiled before BPM5 was introduced.

- The reclassification of capital transfers to the new capital account from the current account has increased the current account deficit by \$1.1b in 1996–97.
- The adoption of accrual accounting for the measurement of investment income flows results in an increase of \$1.0b in the current account deficit for 1996–97.
- There is an increase of \$50b in gross foreign debt at 30 June 1997 from widening the scope of debt (adding \$15b), the inclusion of financial derivatives (adding \$10b) and grossing up of debt transactions between affiliated enterprises (adding \$25b).
- There is an increase in net foreign debt of \$4b arising from the changes noted in the previous point.

### SNA93 changes

- Constant price estimates of goods and services that are rebased every five years will be replaced by annually reweighted, chain Laspeyres volume measures (CVMs). The related implicit price deflators will be derived from these chain volume measures, and the terms of trade (TOT) will be derived from these new deflators. The impact on the TOT is significant. Using 1989–90 based constant prices, the TOT rose 19% in the 12 years to June 1998. Using CVMs, the increase in TOT is only 10%.
- There will be a measure of the indirect provision of financial services by deposit taking institutions in the acceptance of deposits and the making of loans. This financial intermediation service indirectly measured (FISIM) affects both services credits and debits (by about \$0.1b each in 1997–98) as well as income, with no net effect on the current account.
- The Central Borrowing Authorities (CBAs) established by the State and Territory Governments will be reclassified from the government sector to the financial corporations sector in income, the financial account and the IIP with no net effect on major aggregates.

## Statistical overview

As shown in table 30.2, the balance on current account for 1997–98 was a deficit of \$23.9b, an increase of \$6.9b (40%) on the deficit recorded for 1996–97. The increase in the deficit in 1997–98 was largely due to a turnaround in the balance on goods and services, from a surplus of \$1.8b in 1996–97 to a deficit of \$4.4b, reflecting mainly a turnaround in the goods balance from a surplus of \$1.5b to a deficit of \$3.7b. However, these comparisons are affected by a \$1.8b Reserve Bank gold sale and a \$0.5b frigate export both being included in goods credits in 1996–97. RBA gold sales in 1997–98 were only \$0.7b. Net services moved from a surplus of \$0.3b in 1996–97 to a deficit of \$0.8b, with increases in transportation and travel debits accounting for most of the turnaround. The net income deficit for 1997–98 rose \$0.6b (3%) to \$19.6b, with an increase in income credits of \$1.4b (17%) to \$10.1b being more than offset by an increase in

income debits of \$2.0b (7%) to \$29.6b. A little over half the increase in income debits was attributable to higher income accruing on foreign equity investments in Australia.

The balance on capital account fell \$0.2b (15%) to a net inflow of \$1.1b.

The balance on financial account increased by \$3.9b (23%) to a net inflow of \$21.1b. There was an increase of \$8.3b (62%) in the inflow on portfolio investment to a net inflow of \$21.7b, and a \$4.6b fall in the outflow in reserve assets, to an outflow of \$0.6b. Partly offsetting these movements were a \$7.8b turnaround in other investment, from inflow to a net outflow of \$3.8b, and a fall of \$1.3b in the inflow on direct investment to a net inflow of \$3.9b. The fall in net inflow on direct investment resulted from the outflow on Australian direct investment abroad increasing faster than the inflow of direct investment in Australia.

### 30.2 BALANCE OF PAYMENTS, Summary

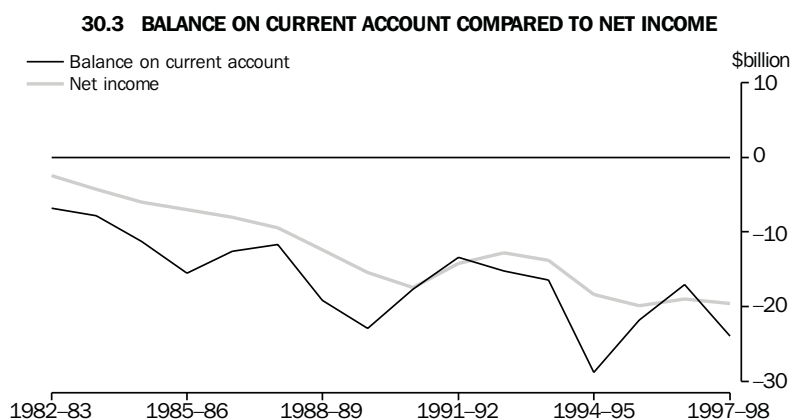
	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Current account</b>	<b>-15 210</b>	<b>-16 416</b>	<b>-28 849</b>	<b>-21 802</b>	<b>-17 052</b>	<b>-23 941</b>
<i>Goods and services</i>	-2 058	-2 234	-9 898	-1 869	1 805	-4 418
Credits	76 827	82 928	87 540	99 039	105 360	114 024
Debits	-78 885	-85 162	-97 438	-100 908	-103 555	-118 442
<i>Goods</i>	700	-444	-8 216	-1 583	1 496	-3 654
Credits	60 634	64 419	67 101	76 146	80 934	88 474
Debits	-59 934	-64 863	-75 317	-77 729	-79 438	-92 128
<i>Services</i>	-2 758	-1 790	-1 682	-286	309	-764
Credits	16 193	18 509	20 439	22 893	24 426	25 550
Debits	-18 951	-20 299	-22 121	-23 179	-24 117	-26 314
<i>Income</i>	-12 802	-13 843	-18 423	-19 907	-18 983	-19 567
Credits	6 106	5 808	6 954	7 162	8 622	10 059
Debits	-18 908	-19 651	-25 377	-27 069	-27 605	-29 626
<i>Current transfers</i>	-350	-339	-528	-26	126	44
Credits	3 073	3 112	3 026	3 212	3 377	3 592
Debits	-3 423	-3 451	-3 554	-3 238	-3 251	-3 548
<b>Capital and financial account</b>	<b>14 741</b>	<b>14 645</b>	<b>28 610</b>	<b>21 914</b>	<b>18 567</b>	<b>22 253</b>
<i>Capital account</i>	571	317	572	1 074	1 318	1 121
<i>Capital transfers</i>	604	300	540	1 049	1 323	1 104
Credits	1 347	1 058	1 383	1 956	2 200	2 075
Debits	-743	-758	-843	-907	-877	-971
<i>Net acquisition/disposal of non-produced, non-financial assets</i>	-33	17	32	25	-5	17
<i>Financial account</i>	14 170	14 328	28 038	20 840	17 249	21 132
<i>Direct investment</i>	2 302	997	4 080	5 067	5 173	3 885
Abroad	-6 345	-3 910	-3 429	-7 935	-5 830	-8 271
In Australia	8 647	4 907	7 509	13 002	11 003	12 156
<i>Portfolio investment</i>	6 749	18 443	18 378	25 661	13 378	21 680
<i>Other investment</i>	1 186	-4 075	3 609	-9 071	3 922	-3 836
<i>Reserve assets</i>	3 933	-1 037	1 971	-817	-5 224	-597
<b>Net errors and omissions</b>	<b>469</b>	<b>1 771</b>	<b>239</b>	<b>-112</b>	<b>-1 515</b>	<b>1 688</b>

Source: Balance of Payments and International Investment Position, Australia (5302.0).



Graph 30.3 illustrates the importance of net income to the balance on current account. The net income deficit in the early 1980s accounted for less than half the current account deficit. However, from 1990–91 about 85% of the current account deficit is attributable to the income deficit.

Table 30.4 shows the annual levels of Australia's official reserve assets and both the end of year and period average exchange rates for the major currencies, special drawing rights, and the trade weighted index.



### 30.4 RESERVE ASSETS AND EXCHANGE RATES

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
RESERVE ASSETS (\$m)						
<b>Total reserve assets</b>	<b>20 823</b>	<b>20 661</b>	<b>20 184</b>	<b>19 059</b>	<b>22 790</b>	<b>25 447</b>
Monetary gold	4 448	4 208	4 316	3 826	1 757	1 236
Special drawing rights	133	110	95	57	37	25
Reserve position in IMF	855	749	753	616	627	1 449
Foreign exchange	15 387	15 594	15 020	14 560	20 369	22 737
EXCHANGE RATES						
End of period						
United States dollar	0.6722	0.7291	0.7086	0.7890	0.7455	0.6135
United Kingdom pound	0.4453	0.4721	0.4452	0.5099	0.4482	0.3681
German mark	1.137	1.159	0.981	1.200	1.295	1.110
Japanese yen	71.54	72.20	60.08	86.48	85.20	86.16
Special drawing right	0.4818	0.5026	0.4539	0.5476	0.5347	0.4617
Period average(a)						
United States dollar	0.7030	0.6919	0.7427	0.7593	0.7828	0.6806
United Kingdom pound	0.4363	0.4623	0.4705	0.4909	0.4851	0.4138
German mark	1.103	1.171	1.120	1.109	1.251	1.221
Japanese yen	84.22	73.52	70.35	77.66	90.51	86.02
Special drawing right	0.4982	0.4944	0.4972	0.5156	0.5521	0.5026
TRADE-WEIGHTED INDEX OF VALUE OF THE AUSTRALIAN DOLLAR (May 1970=100)						
End of period	49.5	53.0	48.4	58.1	56.7	57.9
Period average(a)	52.3	51.4	52.8	54.8	58.7	58.3

(a) These exchange rates and index numbers are derived by averaging figures for each trading day.

Source: Reserve Bank of Australia for reserve assets and exchange rates in respect of each trading day.

## International trade in goods and services (balance of payments basis)

Tables 30.5 and 30.6 show annual values of Australian exports (credits) and imports (debits) of goods and services at current and constant (average 1989–90) prices. These estimates are compiled quarterly on a balance of payments basis within the framework outlined above.

The current price value of a transaction may be expressed conceptually as the product of a price and quantity. The value of the transaction at constant prices may then be thought of as being derived by substituting, for the current price, the corresponding price in the chosen base year.

There are, however, many transactions recorded in statistics of international trade in goods and services for which it is not possible to apply such an approach. In such cases it is necessary to make assumptions and approximations (e.g. revaluing by means of the price index which is considered to be most closely related to the commodity involved). The published estimates at constant prices should be viewed in this light.

The balance on goods and services recorded a deficit of \$4.4b in 1997–98 at current prices. Goods credits rose 9% to \$88.5b, with significant increases recorded in coal, metal ores, metals, 'other' rural and meat. Decreases were recorded in cereal grains and, to a lesser extent, transport equipment.

Goods debits increased 16% to \$92.1b. The most significant increases occurred in non-industrial transport equipment, non-monetary gold, processed industrial supplies n.e.s., consumption goods n.e.s., and machinery and industrial equipment. Decreases were recorded in fuels and lubricants, and civil aircraft.

Exports and imports of merchandise goods, on a recorded trade basis without adjustment for balance of payments purposes, are shown by country in table 30.24.

In current price terms, after recording a surplus of \$0.3b in 1996–97, the first annual surplus since 1945–46, the balance on services turned back to a deficit of \$0.8b in 1997–98.

In constant price terms, after being in surplus for 6 of the 7 years to 1996–97, the balance on goods and services swung back into deficit in 1997–98. Goods and services credits increased by \$4.8b (4%) largely due to a 5% increase in goods, but were overtaken by goods and services debits rising by \$13.6b (12%), again mainly due to a 15% increase in goods.

The components of merchandise goods shown in tables 30.5 and 30.6 are defined in terms of groupings of items in the United Nations *Standard International Trade Classification Revision 3* (SITC Rev. 3) for credits, and the UN's *Classification of Broad Economic Categories*.

## 30.5 GOODS AND SERVICES CREDITS

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
	\$m	\$m	\$m	\$m	\$m	\$m
AT CURRENT PRICES						
<b>Goods and services credits</b>	<b>76 827</b>	<b>82 928</b>	<b>87 540</b>	<b>99 039</b>	<b>105 360</b>	<b>114 024</b>
<i>Goods credits</i>	60 634	64 419	67 101	76 146	80 934	88 474
General merchandise	55 442	58 301	61 539	69 609	73 379	80 602
Rural Goods	16 008	17 130	17 315	19 588	21 045	22 121
Meat and meat preparations	3 750	4 043	3 654	3 292	2 957	3 729
Cereal grains and cereal preparations	2 954	3 205	2 523	4 926	5 954	5 096
Wool and sheepskins	3 367	3 369	4 216	3 664	3 744	4 011
Other rural	5 937	6 513	6 922	7 706	8 390	9 285
Non-rural goods	39 434	41 171	44 224	50 021	52 334	58 481
Metal ores and minerals	7 943	7 671	7 968	9 088	9 407	10 804
Coal, coke and briquettes	7 620	7 253	6 936	7 843	8 005	9 590
Other mineral fuels	3 913	3 351	3 794	4 165	5 154	5 310
Metals (excluding non-monetary gold)	5 210	5 396	6 097	6 799	6 054	7 246
Machinery	4 344	5 293	6 035	7 119	7 001	7 499
Transport equipment	2 022	2 087	2 047	2 500	3 649	3 438
Other manufactures	6 026	6 966	7 907	8 755	9 108	9 873
Other non-rural	2 356	3 154	3 440	3 752	3 956	4 721
Sugar, sugar preparations and honey	1 072	1 315	1 730	1 712	1 694	n.p.
Other	1 284	1 839	1 710	2 040	2 262	n.p.
Other goods	5 192	6 118	5 562	6 537	7 555	7 872
<i>Services credits</i>	16 193	18 509	20 439	22 893	24 426	25 550
AT CONSTANT PRICES(a)						
<b>Goods and services credits</b>	<b>78 524</b>	<b>86 270</b>	<b>89 947</b>	<b>99 692</b>	<b>109 895</b>	<b>114 706</b>
<i>Goods credits</i>	63 512	69 274	70 805	78 770	87 825	92 001
General merchandise	57 967	63 287	65 058	72 004	79 234	82 760
Rural goods	17 730	19 021	17 425	18 789	21 642	21 369
Meat and meat preparations	3 766	3 828	3 731	3 642	3 571	4 060
Cereal grains and cereal preparations	3 105	3 810	2 675	3 923	5 480	4 591
Wool and sheepskins	5 205	5 429	5 037	4 793	5 198	4 865
Other rural	5 654	5 954	5 982	6 431	7 393	7 853
Non-rural goods	40 237	44 266	47 633	53 215	57 592	61 391
Metal ores and minerals	8 804	9 449	9 936	10 508	11 119	11 243
Coal, coke and briquettes	7 227	7 207	7 554	7 729	8 081	8 967
Other mineral fuels	3 155	3 159	3 563	3 780	4 152	4 657
Metals (excluding non-monetary gold)	6 164	6 750	6 390	6 969	7 086	7 425
Machinery	4 570	5 916	7 269	9 731	10 655	12 087
Transport equipment	1 668	1 633	1 608	2 090	3 101	2 759
Other manufactures	6 052	6 896	7 851	8 622	9 309	9 702
Other non-rural	2 597	3 256	3 462	3 786	4 089	4 551
Sugar, sugar preparations and honey	1 227	1 345	1 654	1 674	1 757	n.p.
Other	1 370	1 911	1 807	2 112	2 333	n.p.
Other goods	5 545	5 987	5 747	6 766	8 591	9 241
<i>Services credits</i>	15 012	16 996	19 142	20 922	22 070	22 705

(a) Average 1989–90 prices.

Source: Balance of Payments and International Investment Position, Australia (5302.0).

## 30.6 GOODS AND SERVICES DEBITS

	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
	\$m	\$m	\$m	\$m	\$m	\$m
AT CURRENT PRICES						
<b>Goods and services debits</b>	<b>-78 885</b>	<b>-85 162</b>	<b>-97 438</b>	<b>-100 908</b>	<b>-103 555</b>	<b>-118 442</b>
<i>Goods debits</i>	-59 934	-64 863	-75 317	-77 729	-79 438	-92 128
General merchandise	-58 248	-63 236	-73 620	-76 007	-77 205	-87 494
Consumption goods	-15 926	-17 233	-19 418	-19 860	-21 293	-25 907
Food and beverages, mainly for consumption	-2 261	-2 430	-2 592	-2 760	-2 879	-3 282
Household electrical items	-1 382	-1 436	-1 744	-1 766	-1 890	-2 061
Non-industrial transport equipment	-3 478	-3 800	-4 758	-4 436	-5 143	-7 108
Textiles, clothing and footwear	-2 178	-2 320	-2 566	-2 726	-2 880	-3 455
Toys, books and leisure goods	-2 238	-2 496	-2 545	-2 534	-2 567	-2 957
Consumption goods n.e.s.	-4 389	-4 751	-5 213	-5 638	-5 934	-7 044
Capital goods	-13 655	-14 843	-18 541	-19 183	-18 884	-21 182
Machinery and industrial equipment	-5 446	-6 414	-7 897	-8 326	-8 020	-8 875
ADP equipment	-2 319	-2 629	-3 232	-3 593	-3 719	-4 348
Telecommunications equipment	-1 224	-1 182	-1 804	-1 996	-1 748	-2 075
Civil aircraft	-828	-241	-529	-688	-784	-464
Industrial transport equipment n.e.s.	-1 838	-2 084	-2 714	-2 214	-2 178	-2 557
Capital goods n.e.s.	-2 000	-2 293	-2 365	-2 366	-2 435	-2 863
Intermediate and other merchandise goods	-28 667	-31 160	-35 661	-36 964	-37 028	-40 405
Food and beverages, mainly for industry	-436	-509	-774	-700	-641	-747
Primary industrial supplies n.e.s.	-677	-701	-901	-879	-839	-948
Fuels and lubricants	-3 623	-3 317	-3 566	-4 163	-5 004	-4 250
Parts for transport equipment	-3 675	-4 183	-4 714	-4 600	-4 609	-5 359
Parts for ADP equipment	-1 423	-1 681	-1 858	-1 857	-1 759	-1 992
Other parts for capital goods	-4 236	-5 047	-5 975	-6 393	-6 507	-7 181
Organic and inorganic chemicals	-2 056	-2 102	-2 431	-2 754	-2 743	-2 822
Paper and paperboard	-1 381	-1 465	-1 794	-1 868	-1 713	-1 902
Textile yarn and fabrics	-1 763	-1 869	-2 036	-1 922	-1 817	-2 007
Iron and steel	-946	-1 039	-1 285	-1 408	-1 297	-1 623
Plastics	-1 272	-1 375	-1 646	-1 685	-1 577	-1 816
Processed industrial supplies n.e.s.	-6 971	-7 586	-8 290	-8 398	-8 212	-9 401
Other merchandise goods	-208	-286	-391	-337	-310	-357
Other goods	-1 686	-1 627	-1 697	-1 722	-2 233	-4 634
<i>Services debits</i>	-18 951	-20 299	-22 121	-23 179	-24 117	-26 314

...continued

## 30.6 GOODS AND SERVICES DEBITS—continued

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
	\$m	\$m	\$m	\$m	\$m	\$m
AT CONSTANT PRICES(a)						
<b>Goods and services debits</b>	<b>-71 913</b>	<b>-77 483</b>	<b>-91 307</b>	<b>-96 900</b>	<b>-108 744</b>	<b>-122 311</b>
<i>Goods debits</i>	-55 654	-60 298	-72 482	-77 538	-88 045	-101 295
General merchandise	-54 077	-58 893	-70 976	-76 036	-85 972	-96 795
Consumption goods	-13 735	-14 371	-16 452	-16 866	-18 788	-21 598
Food and beverages, mainly for consumption	-2 010	-2 203	-2 325	-2 366	-2 498	-2 676
Household electrical items	-1 299	-1 308	-1 680	-1 760	-2 006	-2 090
Non-industrial transport equipment	-2 607	-2 539	-3 097	-2 920	-3 628	-4 850
Textiles, clothing and footwear	-1 964	-2 081	-2 439	-2 631	-2 822	-3 145
Toys, books and leisure goods	-2 025	-2 205	-2 340	-2 261	-2 352	-2 459
Consumption goods n.e.s.	-3 830	-4 035	-4 571	-4 928	-5 482	-6 378
Capital goods	-12 720	-14 098	-19 136	-22 401	-27 139	-31 895
Machinery and industrial equipment	-4 442	-5 043	-6 344	-6 728	-6 907	-7 023
ADP equipment	-3 438	-4 585	-6 773	-9 357	-13 028	-17 052
Telecommunications equipment	-1 151	-1 050	-1 810	-2 303	-2 873	-3 476
Civil aircraft	-709	-195	-449	-598	-691	-334
Industrial transport equipment n.e.s.	-1 316	-1 368	-1 810	-1 433	-1 483	-1 652
Capital goods n.e.s.	-1 664	-1 857	-1 950	-1 982	-2 157	-2 358
Intermediate and other merchandise goods	-27 622	-30 424	-35 388	-36 769	-40 045	-43 302
Food and beverages, mainly for industry	-443	-489	-512	-482	-487	-456
Primary industrial supplies n.e.s.	-674	-688	-799	-732	-727	-768
Fuels and lubricants	-3 257	-3 251	-3 435	-3 955	-4 241	-3 863
Parts for transport equipment	-3 155	-3 351	-3 799	-3 743	-4 058	-4 415
Parts for ADP equipment	-2 107	-2 924	-3 886	-4 806	-6 151	-7 816
Other parts for capital goods	-3 624	-4 298	-5 338	-5 990	-6 583	-6 886
Organic and inorganic chemicals	-2 172	-2 392	-2 628	-2 779	-2 939	-2 893
Paper and paperboard	-1 435	-1 533	-1 944	-1 694	-1 811	-1 937
Textile yarn and fabrics	-1 716	-1 883	-2 118	-1 985	-2 236	-2 424
Iron and steel	-971	-1 075	-1 382	-1 396	-1 383	-1 699
Plastics	-1 330	-1 381	-1 593	-1 459	-1 486	-1 606
Processed industrial supplies n.e.s.	-6 534	-6 880	-7 565	-7 412	-7 596	-8 150
Other merchandise goods	-204	-279	-389	-336	-347	-389
Other goods	-1 577	-1 405	-1 506	-1 502	-2 073	-4 500
<i>Services debits</i>	-16 259	-17 185	-18 825	-19 362	-20 699	-21 016

Source: Balance of Payments and International Investment Position, Australia (5302.0).

**30.7 IMPLICIT PRICE DEFLATORS AND TERMS OF TRADE**

	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Implicit price deflators(a)						
Goods and services credits	97.8	96.1	97.3	99.3	95.9	99.4
Goods credits	95.5	93.0	94.8	96.7	92.2	96.2
Services credits	107.9	108.9	106.8	109.4	110.7	112.5
Goods and services debits	109.7	109.9	106.7	104.1	95.2	96.8
Goods debits	107.7	107.6	103.9	100.2	90.2	91.0
Services debits	116.6	118.1	117.5	119.7	116.5	125.2
Terms of trade(b)						
Goods and services	89.2	87.4	91.2	95.4	100.7	102.7
Goods	88.7	86.4	91.2	96.5	102.2	105.7
Services	92.5	92.2	90.9	91.4	95.0	89.9

(a) Derived by dividing the estimates at current prices in tables 30.5 and 30.6 by the estimates at constant prices in those tables.

(b) Derived by dividing the IPDs for credits by the IPDs for debits.

Source: *Balance of Payments and International Investment Position, Australia* (5302.0).

Australia's terms of trade rose 2% in 1997-98, resulting from a 4% rise in the implicit price deflator or IPD (current prices over average 1989-90 prices) for goods and services credits, which was only partly offset by a 2% rise in the IPD for goods and services debits. For credits, the goods IPD rose 4% and the services IPD rose 2%. For debits the goods deflator rose 1% while the services deflator rose 9% (table 30.7).

### International trade in services

In current price terms, net services for 1997-98 recorded a deficit of \$0.8b, a turnaround from a surplus of \$0.3b in 1996-97. Services credits increased by \$1.1b (5%) to \$25.6b, mainly due to increases in communications services credits, other business services credits and computer information services credits. Services debits increased by \$2.2b (9%) to \$26.3b, mainly due to increases in travel debits and transportation debits. Table 30.8 provides details of the international trade in services.

As shown in table 30.9, the main destinations for services exports (credits) in 1996-97 (the latest year available for regional data) were: Japan (15%), United States (13%), United Kingdom (9%), New Zealand (6%), Singapore (6%) and Hong Kong (5%). Significant growth has been recorded since 1991-92 in services exports to the United States, Japan, Republic of Korea and Singapore. The main source countries for services debits in 1996-97, as shown in table 30.10, were: United States (20%), United Kingdom (16%), Japan (6%), Hong Kong (5%), Singapore (5%) and New Zealand (5%). The United States, United Kingdom, Indonesia, Hong Kong and Switzerland all increased significantly as service suppliers since 1991-92.

## 30.8 INTERNATIONAL TRADE IN SERVICES

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
	\$m	\$m	\$m	\$m	\$m	\$m
CREDITS						
<b>Services credits</b>	<b>16 193</b>	<b>18 509</b>	<b>20 439</b>	<b>22 893</b>	<b>24 426</b>	<b>25 550</b>
Transportation services	5 290	5 974	5 985	6 526	6 648	6 681
Passenger	2 167	2 334	4 858	5 305	5 697	5 675
Freight	602	1 089	1 127	1 221	951	1 006
Other	2 521	2 551	n.p.	n.p.	n.p.	n.p.
Travel services	7 019	8 274	9 956	11 252	11 926	11 910
Business	516	581	677	798	665	678
Personal	6 503	7 693	9 279	10 454	11 261	11 232
Communications services	810	780	808	896	947	1 317
Construction services	98	16	105	66	70	52
Insurance services	412	508	556	748	820	872
Financial services	322	499	412	445	508	572
Computer and information services	216	242	218	217	277	503
Royalties and licence fees	255	289	320	329	348	396
Other business services	1 093	1 194	1 340	1 613	1 882	2 165
Merchanting and other trade-related	146	143	256	331	436	429
Operational leasing	20	11	12	7	10	9
Miscellaneous business, professional and technical	927	1 040	1 072	1 275	1 436	1 727
Personal, cultural and recreational services	203	180	185	248	440	529
Government services n.e.i.	475	553	554	553	560	553
DEBITS						
<b>Services debits</b>	<b>-18 951</b>	<b>-20 299</b>	<b>-22 121</b>	<b>-23 179</b>	<b>-24 117</b>	<b>-26 314</b>
Transportation services	-6 341	-6 925	-8 259	-8 488	-8 439	-8 973
Passenger	-2 457	-2 466	-2 721	-2 928	-3 003	-3 148
Freight	-3 748	-3 830	-4 360	-4 405	-4 373	-4 917
Other	-136	-629	-1 178	-1 155	-1 063	-908
Travel services	-5 430	-5 615	-6 272	-6 988	-7 769	-8 440
Business	-1 173	-1 413	-1 696	-2 056	-2 286	-2 452
Personal	-4 257	-4 202	-4 576	-4 932	-5 483	-5 988
Communications services	-859	-971	-1 020	-1 060	-1 066	-1 291
Construction services	0	0	0	0	0	0
Insurance services	-820	-1 036	-1 064	-1 068	-1 148	-1 196
Financial services	-431	-407	-456	-298	-325	-340
Computer and information services	-192	-195	-200	-203	-253	-345
Royalties and license fees	-1 073	-1 211	-1 283	-1 304	-1 382	-1 459
Other business services	-2 761	-2 843	-2 510	-2 646	-2 669	-3 017
Merchanting and other trade-related	-233	-204	-250	-276	-362	-410
Operational leasing	-1 262	-1 435	-1 041	-1 032	-814	-859
Miscellaneous business, professional and technical	-1 266	-1 204	-1 219	-1 338	-1 493	-1 748
Personal, cultural and recreational services	-466	-533	-519	-555	-547	-661
Government services n.e.i.	-578	-563	-538	-569	-519	-592

Source: Balance of Payments and International Investment Position, Australia (5302.0).

## 30.9 SERVICES CREDITS, By Country and Country Group

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
	\$m	\$m	\$m	\$m	\$m	\$m
<b>COUNTRIES</b>						
Belgium and Luxembourg	33	20	32	47	64	106
Brunei Darussalam	9	20	15	23	25	24
Canada	250	224	293	240	281	286
Central America and Caribbean	90	11	18	12	11	9
Chile	2	2	5	5	7	5
China, People's Republic of	187	250	320	375	378	380
Fiji	66	66	91	80	72	66
France	130	178	232	197	171	186
Germany	453	500	603	591	576	630
Greece	36	34	53	42	52	48
Hong Kong	589	724	860	852	1 061	1 186
Indonesia	365	495	630	840	972	1 041
Ireland, Republic of	27	34	50	61	69	74
Italy	156	158	181	177	184	229
Japan	2 707	2 948	3 131	3 420	3 661	3 655
Korea, Republic of	229	359	536	835	1 116	1 098
Malaysia	483	471	627	684	769	809
Mexico	65	8	15	9	4	4
Netherlands	162	179	162	192	163	200
New Zealand	1 136	1 145	1 172	1 248	1 413	1 541
Papua New Guinea	284	233	267	238	233	280
Philippines	114	111	152	161	182	206
Russian Federation(a)	66	74	85	66	69	62
Singapore	550	723	847	1 254	1 215	1 364
South Africa	51	87	139	152	173	177
Sweden	92	65	81	80	94	92
Switzerland	158	224	210	259	261	272
Taiwan	260	443	559	679	702	582
Thailand	227	277	384	503	523	494
United Kingdom	1 866	1 768	1 826	1 914	2 052	2 246
United States of America	1 866	2 115	2 382	2 384	2 986	3 203
Africa n.e.s.	97	123	160	93	106	113
America n.e.s.	34	59	84	118	131	324
Asia n.e.s.	408	564	574	808	874	953
Europe n.e.s.	509	618	824	649	674	590
Oceania n.e.s.	264	261	328	259	264	290
International institutions	0	4	4	4	4	4
Unallocated	566	618	577	888	1 301	1 597
<b>Total all countries</b>	<b>14 587</b>	<b>16 193</b>	<b>18 509</b>	<b>20 439</b>	<b>22 893</b>	<b>24 426</b>
<b>COUNTRY GROUPS(b)</b>						
APEC	8 972	10 305	12 187	13 750	15 528	16 158
ASEAN	1 791	2 131	2 725	3 506	3 754	3 991
EU	3 013	3 051	3 434	3 595	3 720	4 134
OECD	9 343	9 932	10 856	11 385	12 550	14 320

(a) For 1991-92, Russian Federation includes all republics of the former USSR; from 1992-93 the remaining republics of the former USSR have been included in either Europe n.e.s. or Asia n.e.s. (b) APEC includes Brunei Darussalam, Canada, Chile (from 1994-95), Peoples' Republic of China, Hong Kong, Indonesia, Japan, Republic of Korea, Malaysia, Mexico (from 1993-94), New Zealand, Papua New Guinea (from 1993-94), Philippines, Singapore, Taiwan, Thailand and United States of America. ASEAN includes Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam (from 1995-96). EU includes Austria (from 1995), Belgium, Denmark, Finland (from 1995), France, Germany, Greece, Republic of Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden (from 1995) and United Kingdom. OECD includes Austria, Belgium, Canada, Czech Republic (from 1996), Denmark, Finland, France, Germany, Greece, Hungary (from 1996), Iceland, Republic of Ireland, Italy, Japan, Republic of Korea (from 1996-97), Luxembourg, Mexico (from 1994-95), New Zealand, Netherlands, Norway, Poland (from 1996-97), Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States of America.

Source: Balance of Payments and International Investment Position, Australia (5363.0).



**30.10 SERVICES DEBITS, By Country and Country Group**

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
	\$m	\$m	\$m	\$m	\$m	\$m
<b>COUNTRIES</b>						
Belgium and Luxembourg	-113	-121	-115	-107	-86	-67
Brunei Darussalam	-9	-7	-6	-9	-10	-7
Canada	-272	-225	-297	-301	-319	-320
Central America and Caribbean	-269	-256	-297	-206	-201	-163
Chile	-14	-12	-15	-16	-21	-18
China, People's Republic of	-157	-297	-311	-443	-458	-447
Fiji	-171	-162	-171	-176	-190	-178
France	-254	-232	-270	-270	-272	-300
Germany	-562	-429	-444	-507	-503	-551
Greece	-167	-167	-264	-237	-231	-217
Hong Kong	-804	-859	-889	-999	-1 090	-1 272
Indonesia	-234	-344	-396	-485	-549	-708
Ireland, Republic of	-64	-77	-84	-97	-110	-142
Italy	-356	-382	-348	-385	-433	-541
Japan	-1 291	-1 254	-1 390	-1 662	-1 467	-1 516
Korea, Republic of	-109	-157	-208	-262	-303	-268
Malaysia	-270	-325	-436	-483	-524	-626
Mexico	-9	-8	-9	-11	-13	-16
Netherlands	-373	-448	-458	-538	-409	-412
New Zealand	-865	-883	-864	-950	-1 063	-1 149
Papua New Guinea	-113	-109	-154	-134	-162	-174
Philippines	-69	-86	-93	-111	-125	-144
Russian Federation(a)	-111	-231	-231	-150	-116	-81
Singapore	-803	-901	-919	-1 189	-1 231	-1 246
South Africa	-26	-40	-80	-103	-118	-155
Sweden	-127	-166	-137	-166	-128	-102
Switzerland	-159	-286	-355	-462	-511	-572
Taiwan	-119	-130	-137	-142	-153	-155
Thailand	-306	-376	-360	-384	-436	-403
United Kingdom	-2 878	-3 087	-3 341	-3 541	-3 811	-3 904
United States of America	-3 643	-4 016	-4 075	-4 244	-4 519	-4 827
Africa n.e.s.	-154	-148	-147	-130	-149	-163
America n.e.s.	-84	-119	-107	-117	-154	-217
Asia n.e.s.	-328	-591	-654	-746	-622	-608
Europe n.e.s.	-1 192	-868	-975	-1 091	-1 087	-874
Oceania n.e.s.	-104	-194	-187	-158	-164	-156
International institutions	-4	0	-2	0	0	0
Unallocated	-941	-958	-1 073	-1 109	-1 441	-1 418
<b>Total all countries</b>	<b>-17 524</b>	<b>-18 951</b>	<b>-20 299</b>	<b>-22 121</b>	<b>-23 179</b>	<b>-24 117</b>
<b>COUNTRY GROUPS(b)</b>						
APEC	-8 951	-9 860	-10 544	-11 825	-12 443	-13 296
ASEAN	-1 703	-2 109	-2 326	-2 784	-3 066	-3 341
EU	-5 140	-5 288	-5 581	-6 136	-6 361	-6 520
OECD	-12 032	-12 300	-13 083	-14 275	-14 631	-15 494

(a) For 1991-92, Russian Federation includes all republics of the former USSR; from 1992-93 the remaining republics of the former USSR have been included in either Europe n.e.s. or Asia n.e.s. (b) APEC includes Brunei Darussalam, Canada, Chile (from 1994-95), Peoples' Republic of China, Hong Kong, Indonesia, Japan, Republic of Korea, Malaysia, Mexico (from 1993-94), New Zealand, Papua New Guinea (from 1993-94), Philippines, Singapore, Taiwan, Thailand and United States of America. ASEAN includes Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam (from 1995-96). EU includes Austria (from 1995), Belgium, Denmark, Finland (from 1995), France, Germany, Greece, Republic of Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden (from 1995) and United Kingdom. OECD includes Austria, Belgium, Canada, Czech Republic (from 1996), Denmark, Finland, France, Germany, Greece, Hungary (from 1996), Iceland, Republic of Ireland, Italy, Japan, Republic of Korea (from 1996-97), Luxembourg, Mexico (from 1994-95), New Zealand, Netherlands, Norway, Poland (from 1996-97), Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States of America.

Source: Balance of Payments and International Investment Position, Australia (5363.0).

## International investment position

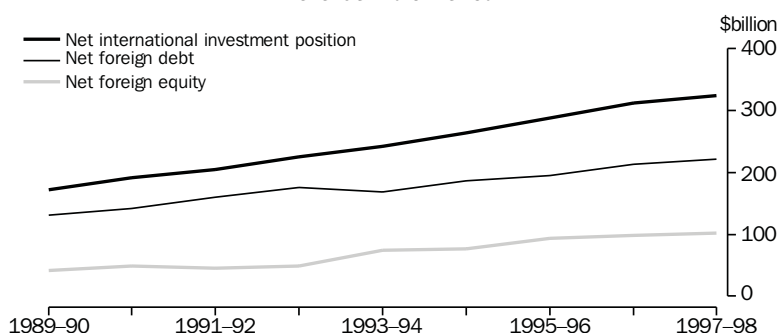
Australia's net international investment position is the difference between the levels of Australia's foreign financial liabilities and the levels of its foreign financial assets. Historically, Australia has had a net liabilities position with the rest of the world.

Australia's net international investment position at 30 June 1998 was a net foreign financial liability of \$324.3b. This was up \$12.7b (4%) on

the position a year earlier and resulted from net increases of \$52.2b in the level of foreign financial liabilities and \$39.6b in the level of foreign financial assets. Of the rise in the net international investment position, \$4.1b was attributable to equity and \$8.5b to debt.

Graph 30.11 shows the components of Australia's international investment position between 1989–90 and 1997–98. It shows that the increases in net foreign liabilities reflect increases in both net foreign debt and net foreign equity in most years.

**30.11 NET INTERNATIONAL INVESTMENT POSITION,  
Level at End of Period**



Source: *Balance of Payments and International Investment Position, Australia* (5302.0).

Table 30.12 shows a reconciliation between opening and closing levels for foreign financial assets, foreign financial liabilities and Australia's net international investment position. Increases

or decreases in these assets and liabilities are due to capital transactions (investment flows), price changes, exchange rate changes and other adjustments.

### 30.12 INTERNATIONAL INVESTMENT POSITION

	Position at beginning of period	Changes in position reflecting				Position at end of period
		Transactions	Price changes	Exchange rate changes	Other adjustments	
	\$m	\$m	\$m	\$m	\$m	\$m
NET INTERNATIONAL INVESTMENT POSITION						
Total						
1995–96	263 198	20 840	–339	–936	5 161	287 921
1996–97	287 921	17 249	13 332	–1 531	–5 327	311 642
1997–98	311 642	21 133	–6 170	–177	–2 125	324 301
Equity						
1995–96	76 885	9 889	–3 573	8 660	1 328	93 190
1996–97	93 190	3 169	9 998	–3 226	–4 967	98 163
1997–98	98 163	22 694	–6 391	–10 409	–1 773	102 284
Debt						
1995–96	186 313	10 951	3 234	–9 596	3 833	194 731
1996–97	194 731	14 080	3 335	1 695	–360	213 479
1997–98	213 479	–1 561	221	10 231	–349	222 017
FOREIGN ASSETS(a)						
Total						
1995–96	–170 174	–19 174	–4 900	11 834	4 016	–178 402
1996–97	–178 402	–18 949	–2 286	–4 540	–3 640	–207 818
1997–98	–207 818	–15 003	–6 360	–15 785	–2 421	–247 387
Equity						
1995–96	–91 878	–9 351	–4 364	8 660	292	–96 642
1996–97	–96 642	–10 591	–2 009	–3 226	–3 684	–116 152
1997–98	–116 152	–5 885	–3 032	–10 409	–2 689	–138 167
Debt						
1995–96	–78 296	–9 823	–536	3 173	3 723	–81 760
1996–97	–81 760	–8 357	–276	–1 315	43	–91 666
1997–98	–91 666	–9 118	–3 328	–5 377	269	–109 221
FOREIGN LIABILITIES(b)						
Total						
1995–96	433 372	40 014	4 560	–12 771	1 145	466 322
1996–97	466 322	36 198	15 618	3 010	–1 687	519 460
1997–98	519 460	36 134	189	15 608	299	571 689
Equity						
1995–96	168 764	19 241	791	0	1 035	189 831
1996–97	189 831	13 761	12 007	0	–1 284	214 315
1997–98	214 315	28 579	–3 360	0	916	240 450
Debt						
1995–96	264 609	20 774	3 769	–12 771	109	276 491
1996–97	276 491	22 436	3 611	3 010	–403	305 145
1997–98	305 145	7 557	3 549	15 608	–620	331 239

(a) Assets include claims of Australian direct investment enterprises on direct investors abroad, which are classified as part of direct investment in Australia. (b) Liabilities include liabilities of Australian direct investors to direct investment enterprises abroad, which are classified as part of direct investment abroad.

Source: *Balance of Payments and International Investment Position, Australia* (5302.0).

## Foreign debt

Foreign debt is a subset of the financial obligations that comprise a country's international investment position. It includes all the non-equity components of the net international investment position, that is, all recorded assets and liabilities other than equity securities and direct investment equity capital, including reinvested earnings.

The level of borrowing and other non-equity liabilities by Australian residents at a particular date can be equated with Australia's foreign debt liabilities. The level of Australian lending abroad and other non-equity assets at the same date are deducted from the level of borrowing to arrive at Australia's net foreign debt.

The level of net foreign debt at 30 June 1998 was \$222.0b, up 4% on 30 June 1997. The increase during 1997–98 resulted from net capital transactions of –\$1.6b, price changes of \$0.2b, exchange rate changes of \$10.2b and other adjustments of –\$0.3b (table 30.16).

Net foreign debt of the public sector (general government plus public financial and non-financial corporations) fell by 21% during 1997–98, to \$52.8b at 30 June 1998, accounting for 24% of total net foreign debt at that date. Net foreign debt of the private sector increased by 15% to \$169.2b, largely as a result of an increase in the net foreign debt of financial corporations (table 30.13).

**30.13 LEVELS OF FOREIGN DEBT—At 30 June**

	1993	1994	1995	1996	1997	1998
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Foreign assets(a)</b>	<b>-61 436</b>	<b>-75 255</b>	<b>-78 296</b>	<b>-81 760</b>	<b>-91 666</b>	<b>-109 221</b>
<i>Public sector</i>	-32 726	-32 836	-31 188	-30 639	-30 323	-35 389
General government	-2 117	-2 382	-1 637	-1 603	-2 058	-1 838
Financial corporations	-29 291	-29 321	-28 547	-28 131	-26 844	-32 514
Reserve Bank	-19 968	-19 912	-19 431	-18 443	-22 163	-23 998
Other financial corporations	-9 323	-9 409	-9 116	-9 688	-4 681	-8 516
Non-financial corporations	-1 317	-1 134	-1 004	-905	-1 422	-1 037
<i>Private sector</i>	-28 710	-42 419	-47 108	-51 122	-61 343	-73 832
Financial corporations	-19 447	-30 779	-32 893	-36 723	-45 132	-57 139
Non-financial corporations	-9 263	-11 640	-14 216	-14 399	-16 211	-16 693
<b>Foreign liabilities(a)</b>	<b>237 484</b>	<b>243 174</b>	<b>264 609</b>	<b>276 491</b>	<b>305 145</b>	<b>331 238</b>
<i>Public sector</i>	91 017	92 476	99 476	99 166	97 316	88 235
General government	57 796	61 468	76 995	79 188	83 500	76 505
Financial corporations	22 704	22 519	14 151	14 879	8 246	4 822
Reserve Bank	93	44	67	51	72	48
Other financial corporations	22 611	22 475	14 084	14 828	8 174	4 774
Non-financial corporations	10 518	8 489	8 330	5 100	5 570	6 908
<i>Private sector</i>	146 466	150 697	165 133	177 325	207 829	243 004
Financial corporations	73 044	87 325	101 536	115 025	144 120	173 121
Non-financial corporations	73 423	63 372	63 597	62 300	63 709	69 883
<b>Net foreign debt</b>	<b>176 048</b>	<b>167 919</b>	<b>186 313</b>	<b>194 731</b>	<b>213 479</b>	<b>222 017</b>
<i>Public sector</i>	58 292	59 640	68 288	68 528	66 993	52 845
General government	55 679	59 086	75 358	77 585	81 442	74 667
Financial corporations	-6 588	-6 801	-14 396	-13 252	-18 598	-27 692
Reserve Bank	-19 875	-19 868	-19 364	-18 392	-22 091	-23 950
Other financial corporations	13 287	13 067	4 968	5 140	3 493	-3 742
Non-financial corporations	9 201	7 355	7 326	4 195	4 149	5 870
<i>Private sector</i>	117 756	108 278	118 025	126 203	146 486	169 172
Financial corporations	53 597	56 547	68 643	78 303	98 989	115 982
Non-financial corporations	64 160	51 732	49 382	47 900	47 498	53 190

(a) Foreign debt levels between direct investors and direct investment enterprises are recorded on a gross basis for assets and liabilities.

Source: Balance of Payments and International Investment Position, Australia (5302.0).

### Levels of Australian investment abroad and foreign investment in Australia

In table 30.14, levels of investment are categorised by direction (Australian investment abroad and foreign investment in Australia), type of investment (direct, portfolio, other and reserve assets) and by instrument.

Direct investment is a category of international investment that reflects the objective of obtaining a lasting interest by a resident in one economy in an enterprise in another economy, and implies a significant degree of influence by the investor on the management of the enterprise. A direct investment relationship is established when a direct investor, who is a resident in one economy, holds 10% or more of

the ordinary shares or voting stock of an enterprise (direct investment enterprise) in another economy. The portfolio investment category covers investment in equity and debt securities (other than direct investment and reserve assets).

The items Australian investment abroad and Foreign investment in Australia in table 30.14 do not equate with foreign assets and liabilities respectively in table 30.12. The difference is due to netting of assets and liabilities in regard to direct investment, both abroad and in Australia. Claims by direct investment enterprises on their direct investors, separately identified in table 30.14, are netted off in that table against liabilities to direct investors. These items are not netted off in table 30.12.

**30.14 LEVELS OF AUSTRALIAN INVESTMENT ABROAD AND FOREIGN INVESTMENT IN AUSTRALIA—At 30 June**

	1993	1994	1995	1996	1997	1998
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Levels of Australian investment abroad</b>	<b>-132 253</b>	<b>-149 977</b>	<b>-159 552</b>	<b>-171 031</b>	<b>-198 663</b>	<b>-237 951</b>
<i>Direct investment abroad(a)</i>	-47 969	-48 671	-54 156	-57 569	-67 776	-81 915
Equity capital and reinvested earnings	-49 356	-50 335	-56 718	-58 336	-68 172	-82 742
Other capital	1 388	1 664	2 562	766	396	827
Claims on affiliated enterprises	-4 879	-3 240	-3 018	-3 548	-4 607	-3 374
Liabilities to affiliated enterprises	6 266	4 904	5 580	4 314	5 003	4 201
<i>Portfolio investment assets</i>	-39 818	-52 949	-56 322	-57 516	-69 441	-80 711
Equity securities	-28 242	-32 565	-35 160	-38 306	-47 980	-55 425
Debt securities	-11 576	-20 383	-21 162	-19 210	-21 460	-25 287
<i>Other investment assets</i>	-23 643	-27 697	-28 890	-36 887	-38 656	-49 878
Trade credits	-5 717	-6 865	-6 295	-6 720	-7 089	-6 710
Loans and other assets	-15 351	-17 843	-19 286	-24 667	-26 779	-36 787
Currency and deposits	-2 575	-2 988	-3 309	-5 500	-4 788	-6 381
<i>Reserve assets</i>	-20 823	-20 661	-20 184	-19 059	-22 790	-25 447
<b>Levels of foreign investment in Australia</b>	<b>357 321</b>	<b>392 332</b>	<b>422 750</b>	<b>458 951</b>	<b>510 305</b>	<b>562 252</b>
<i>Direct investment in Australia(b)</i>	114 297	119 306	123 409	136 834	151 125	162 734
Equity capital and reinvested earnings	91 311	99 449	104 633	116 265	127 992	140 787
Other capital	22 985	19 857	18 776	20 569	23 133	21 947
Claims on direct investors	-516	-3 275	-5 043	-3 057	-4 152	-5 236
Liabilities to direct investors	23 501	23 132	23 819	23 626	27 286	27 182
<i>Portfolio investment liabilities</i>	180 168	209 043	236 290	262 287	295 816	327 531
Equity securities	35 308	57 888	64 131	73 566	86 323	99 663
Debt securities	144 861	151 155	172 159	188 721	209 494	227 868
<i>Other investment liabilities</i>	62 856	63 983	63 051	59 830	63 363	71 988
Trade credits	5 280	6 828	7 211	7 620	4 434	4 961
Loans	48 834	38 035	37 729	31 756	34 213	35 691
Currency and deposits	8 388	18 686	17 626	20 157	21 850	28 506
Other liabilities	354	434	485	297	2 866	2 830

(a) Net direct investment abroad, after deduction of liabilities to direct investment enterprises abroad. (b) Net direct investment in Australia, after deduction of claims of Australian direct investment enterprises on direct investors.

Source: Balance of Payments and International Investment Position, Australia (5302.0).

Australian investment abroad totalled \$238.0b as at 30 June 1998, up 20% on 30 June 1997. This rise was the net effect of a \$14.1b increase in direct investment abroad, an \$11.3b increase in portfolio investment assets, an \$11.2b increase in other investment assets and a \$2.7b increase in reserve assets.

Foreign investment in Australia totalled \$562.3b as at 30 June 1998, up 10% on June 1997. The rise in foreign investment in Australia since 30 June 1997 was due to an \$11.6b increase in direct investment in Australia, a \$31.7b increase in portfolio investment liabilities, and an \$8.6b increase in other investment liabilities. The increase in portfolio investment liabilities was attributable to significant increases in both equity and debt securities.

## Ratios

Table 30.15 and graph 30.16 show that the ratio of the current account deficit to GDP was 4.4% in 1997–98, an increase of one percentage point over the previous year, but still below the average for the last ten years.

Graph 30.17 shows that the ratio of Australia's net foreign liabilities (Australia's net international investment position) to GDP has been rising since 30 June 1988 and reached its highest level of about 60% at 30 June 1997, dropping slightly at 30 June 1998. The ratio of net foreign debt to GDP was 41% at 30 June 1998, little changed on the results for recent years, and up from 33% a decade earlier. The ratio of net foreign equity to GDP, 19% at 30 June 1998, was the same as at 30 June 1997; however this was nearly double this ratio ten years earlier.

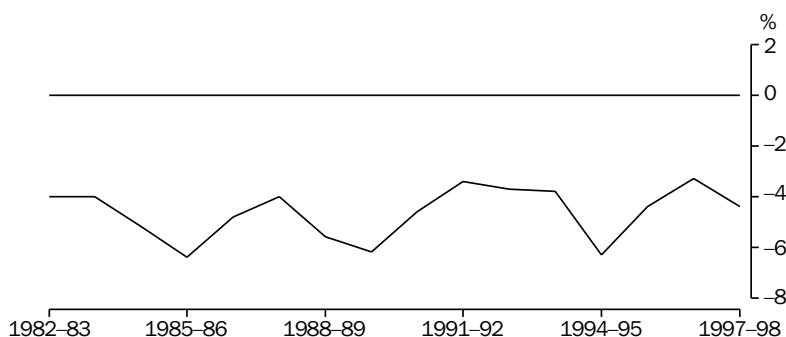
Table 30.15 shows that the net investment income payable on net foreign debt as a percentage of goods and services credits was 10.5% in 1997–98, the lowest ratio since September 1984. The ratio of net investment income payable on equity to goods and services credits was 6.8% in 1997–98, down on the results of the previous three years but above the ratios achieved in the decade to 1993–94.

**30.15 RATIOS**

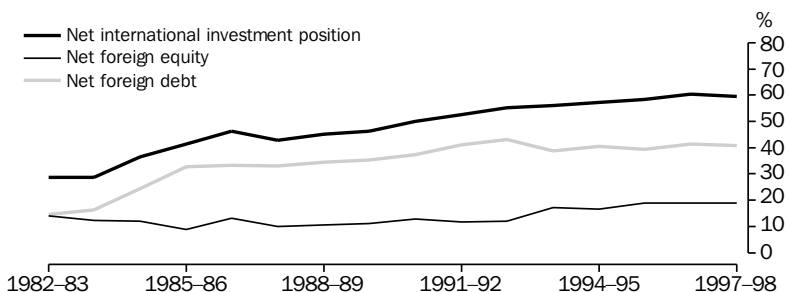
Current transactions	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
\$ MILLION						
GDP(a)	408 299	433 002	460 276	492 371	516 382	544 680
RATIOS TO GDP (%)						
Current account	-3.7	-3.8	-6.3	-4.4	-3.3	-4.4
Goods and services	-0.5	-0.5	-2.2	-0.4	0.3	-0.8
Credits	18.8	19.2	19.0	20.1	20.4	20.9
Debits	-19.3	-19.7	-21.2	-20.5	20.1	21.7
Income	-3.1	-3.2	-4.0	-4.0	-3.7	-3.6
Net international investment position(b)	55.1	56.0	57.2	58.5	60.4	59.5
Net foreign equity	12.0	17.2	16.7	18.9	19.0	18.8
Net foreign debt	43.1	38.8	40.5	39.5	41.3	40.8
RATIOS TO GOODS AND SERVICES CREDITS (%)						
Net investment income	-16.9	-17.0	-21.2	-20.3	-18.1	-17.2
Net foreign equity	-4.6	-5.8	-8.6	-8.5	-7.2	-6.8
Net foreign debt	-12.3	-11.2	-12.7	-11.8	-11.0	-10.5

(a) GDP(I) at current prices, Australian National Accounts: National Income, Expenditure and Product (5206.0). (b) These ratios are derived by expressing net foreign liabilities at end of year as a percentage of GDP(I) at current prices for that year.

Source: *Balance of Payments and International Investment Position, Australia* (5302.0).

**30.16 RATIO OF BALANCE ON CURRENT ACCOUNT TO GDP**

Source: Balance of Payments and International Investment Position, Australia (5302.0);  
Australian National Accounts: National Income, Expenditure and Product (5206.0).

**30.17 RATIOS OF NET INTERNATIONAL INVESTMENT POSITION TO GDP(a)**

(a) These ratios are derived by expressing net foreign liabilities at end of year as a percentage of GDP(I) at current prices for that year.

Source: Balance of Payments and International Investment Position, Australia (5302.0);  
Australian National Accounts: National Income, Expenditure and Product (5206.0).

## Foreign ownership in Australia

Table 30.18 shows that the value of equity on issue by Australian enterprise groups at 30 June 1997 stood at \$744.1b. Of this total, 57% related to shares or equivalent equity interests issued by private corporate trading enterprises. General government, the Reserve Bank and public trading enterprises collectively accounted for a further 19% of total equity issued, while lesser amounts were issued by banks (12% of the total); non-bank deposit-taking institutions (2%); and other financial sub-sectors, including life offices and superannuation funds (10%).

Of the total equity on issue by Australian enterprise groups at 30 June 1997, non-residents held equity valued at \$214.3b (29%), while residents held \$529.8b (71%).

Although the proportion of equity held by non-residents has remained relatively stable at around 29%, the total value of equity on issue has increased by 33%, from \$560.7b to \$744.1b, over the period 30 June 1994 to 30 June 1997.

Analysed by sub-sector, at 30 June 1997 non-residents held 42% of the equity in private corporate trading enterprises, which has changed little over recent years. The value of equity on issue by private corporate trading enterprises at 30 June 1997 increased 15% on the previous year.

Although both the amount issued by banks and the amount of bank equity held by non-residents rose markedly over the period 30 June 1994 to 30 June 1997, the proportion of non-resident holdings of the total equity issued by banks fell from 23% at 30 June 1994 to 20% at 30 June 1997.

**30.18 FOREIGN OWNERSHIP OF EQUITY(a)—At 30 June**

	Unit	1994	1995	1996	1997
<b>ALL SECTORS</b>					
Amount issued	\$b	560.7	587.4	635.9	744.1
Amount held by rest of the world	\$b	157.3	168.8	189.8	214.3
Percentage of foreign ownership	%	28	29	30	29
<b>SUB-SECTORS</b>					
Private corporate trading enterprises					
Amount issued(b)	\$b	321.5	330.5	372.4	427.0
Amount held by rest of the world	\$b	133.9	143.3	160.3	178.5
Percentage of foreign ownership	%	42	43	43	42
Banks					
Amount issued(b)	\$b	47.8	53.0	61.0	91.8
Amount held by rest of the world	\$b	11.2	12.0	14.1	18.7
Percentage of foreign ownership	%	23	23	23	20
Non-bank deposit taking institutions					
Amount issued(b)	\$b	13.8	15.4	15.9	15.9
Amount held by rest of the world(c)	\$b	4.4	4.8	5.2	4.9
Percentage of foreign ownership	%	32	31	33	31
Other financial sub-sectors(d)					
Amount issued(b)	\$b	39.7	39.0	46.0	71.2
Amount held by rest of the world(c)	\$b	7.8	8.7	10.3	12.2
Percentage of foreign ownership	%	20	22	22	17
Other sub-sectors(e)					
Amount issued(b)	\$b	137.9	149.5	140.6	138.2

(a) Equity includes units in trusts. (b) These estimated market values are considered to be of poor quality. They should be used cautiously. (c) From the September quarter 1996 revised collections for the Survey of International Investment were in place, and the classification of the non-bank financial units may not be strictly comparable with that used in earlier periods. (d) Includes life offices and superannuation funds; and other financial institutions. (e) Includes data for general government, the Reserve Bank, and public trading enterprises. There is no foreign ownership in these sub-sectors.

Source: Australian National Accounts: Financial Accounts (5232.0), March quarter 1998; and Balance of Payments and International Investment Position, Australia (5302.0), June quarter 1998.

The value of equity issued by life offices, superannuation funds and other financial institutions increased 79% over the period 30 June 1994 to 30 June 1997. Foreign ownership of this equity increased from 20% at 30 June 1994 to 22% at 30 June 1996, before declining to 17% at 30 June 1997.

Data for equity on issue by unlisted corporations are of lesser quality than the data supplied by the Australian Stock Exchange for listed corporations. Data for unlisted corporations are compiled from returns supplied in the ABS Survey of Financial Information, ABS Survey of International Investment, selected annual reports and estimates

synthesised from analysing residual items in demand and supply tables for the various share markets.

In terms of the analysis undertaken here, errors in the estimated market value of equity on issue will impact on the accuracy of estimates of the proportion of that equity owned by non-residents.

For a more detailed explanation which includes a regional analysis and an analysis by degree of foreign influence, see the article *Foreign Ownership of Equity* published in the June quarter 1998 issue of *Balance of Payments and International Investment Position, Australia* (5302.0).



## International merchandise trade

### Conceptual framework

Australia's international merchandise trade statistics, relating to the exports and imports of goods, are compiled in broad agreement with the United Nations' (UN) recommendations for the compilation of international trade statistics.

The UN recommendations state that merchandise trade covers all movable goods which add to (imports) or subtract from (exports) the stock of material resources of a country as a result of their movement into or out of the country.

The UN definition excludes:

- direct transit trade, that is, goods being transshipped or moved through Australia for purposes of transport only;
- ships and aircraft moving through Australia while engaged in the transport of passengers or goods between Australia and other countries; and
- non-merchandise trade, consisting primarily of goods moving on a temporary basis (e.g. mobile equipment, goods under repair and goods for exhibition) and passengers' effects.

International merchandise trade statistics are compiled by the ABS from information submitted by exporters and importers or their agents to the Australian Customs Service.

The UN recommendations for the compilation of merchandise trade statistics recognise that the basic sources used by most compiling countries—customs records—will not be able to capture certain transactions. In Australia the following types of goods, which fall within the scope of the UN definition of merchandise trade, are excluded because customs entries are not required:

- certain materials under intergovernmental agreements for defence and similar projects;
- migrants' and passengers' effects exported or imported, and parcel post exports and imports of small value.

For exports only, types of goods excluded are:

- fish and other sea products landed abroad directly from the high seas by Australian ships; and
- export consignments where the value of the goods in each transaction is less than \$500.

For imports only, types of goods excluded are:

- bunkers, aviation fuel and stores supplied abroad to Australian ships and aircraft; and
- entries lodged on informal clearance documents (ICDs) for values not exceeding \$250, and ICDs for postal articles valued at up to \$1,000.

### Classification

In addition to the primary classification between exports and imports, international merchandise trade is also classified by commodity, by country of origin/destination, by Australian State of production/destination, and by industry of origin.

Export and import commodity statistics are available classified according to:

- the *Harmonized System*, a World Customs Organization classification which groups goods according to their component materials, from raw materials through to processed and manufactured products;
- the codes and descriptions of the third revision of the United Nations *Standard International Trade Classification*, (SITC Rev. 3). This classification groups commodities according to the degree of processing they have undergone, from food and crude raw materials through to highly transformed manufactures; and
- the 19 categories of the United Nations *Classification by Broad Economic Categories* (BEC). The BEC classifies international trade statistics for the purposes of general economic analysis according to the main end use of the commodities traded.

Commodity export and import statistics in this section are presented according to SITC Rev. 3.

## Valuation

For exports, the point of valuation adopted is free-on-board (f.o.b.) at the Australian port of shipment, while the basis of valuation is 'transactions value', the actual price at which the goods are sold.

For imports, the point of valuation is the point of containerisation (in most cases), or f.o.b. at the customs frontier of the exporting country or the port of loading, whichever comes first. The basis of valuation is the customs value. For transactions between independent buyers and sellers, this will generally be the price actually payable. Where traders are not independent, that is, they may be related or affiliated in some way, an appropriate customs value may be determined.

### 30.19 TOTAL MERCHANDISE EXPORTS AND IMPORTS

Financial year	Exports	Imports	Excess of exports or imports(a)
	\$m	\$m	\$m
1992-93	60 702	59 575	1 127
1993-94	64 548	64 470	78
1994-95	67 052	74 619	-7 567
1995-96	76 005	77 792	-1 787
1996-97	78 932	78 998	-66
1997-98	87 766	90 680	-2 914

(a) A negative sign indicates that imports exceed exports.

Source: *International Trade database, August 1998.*

## Total merchandise exports and imports

In 1997-98, Australian merchandise exports rose by 11% to \$87,766m and Australian merchandise imports rose by 15% to \$90,680m. Imports exceeded exports by \$2,914m, an increase of \$2,848m on the \$66m deficit recorded in 1996-97 (table 30.19 and graph 30.20).

## Merchandise exports and imports by State/Territory

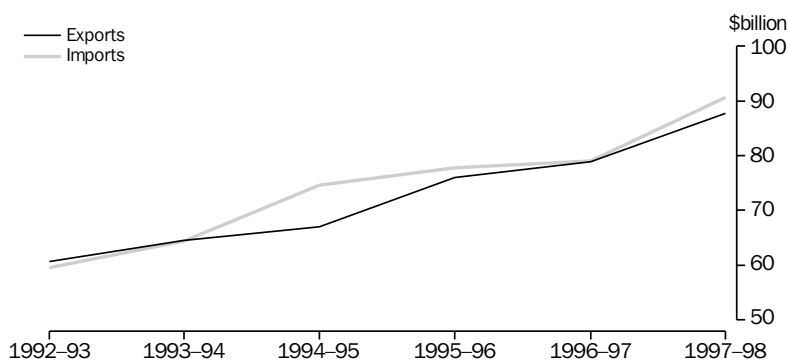
Table 30.21 classifies merchandise trade by Australian State or Territory.

For exports, State/Territory refers to the State of origin of the goods, that is the place where the final stage of production or manufacturing occurs. The State of origin is not necessarily the State in which the goods were loaded for export.

For imports, State/Territory refers to the State of final destination, that is the place where imported goods were released from Customs control. The State of final destination is not necessarily the State in which the goods were discharged, nor is it necessarily the State in which they are used.

Re-exports are defined as goods, materials or articles originally imported into Australia which are exported in the same condition, or after undergoing minor operations (e.g. blending, packaging, bottling, cleaning, husking or shelling) which leave them essentially unchanged.

### 30.20 TOTAL MERCHANDISE EXPORTS AND IMPORTS



Source: *International Trade database, August 1998.*

**30.21 MERCHANDISE EXPORTS AND IMPORTS, By State/Territory**

	Exports			Imports		
	1995–96	1996–97	1997–98	1995–96	1996–97	1997–98
	\$m	\$m	\$m	\$m	\$m	\$m
State/Territory						
New South Wales	16 684	17 730	19 671	34 917	34 229	38 471
Victoria	15 410	16 306	15 931	24 663	25 093	28 840
Queensland	13 625	13 566	16 296	8 052	8 637	9 760
South Australia	4 499	5 009	4 986	3 114	3 413	3 943
Western Australia	18 844	19 332	22 817	6 290	6 815	8 612
Tasmania	1 620	1 708	2 131	351	396	385
Northern Territory	1 210	1 245	1 198	395	404	657
Australian Capital Territory	16	9	13	10	12	10
State not available(a)	290	320	322	0	0	0
<b>Total</b>	<b>72 197</b>	<b>75 226</b>	<b>83 366</b>	<b>77 792</b>	<b>78 998</b>	<b>90 680</b>
Re-exports	3 808	3 705	4 400	—	—	—
<b>Total</b>	<b>76 005</b>	<b>78 932</b>	<b>87 766</b>	<b>77 792</b>	<b>78 998</b>	<b>90 680</b>

(a) Includes commodities for which State/Territory is confidential.

Source: *International Trade database*, August 1998.

New South Wales was the State of final destination for the highest proportion of imports for each of the last three financial years, and Western Australia has been the State of origin of the highest proportion of Australia's exports over this period, largely due to the importance of minerals exports.

### Merchandise exports and imports by country

For the purposes of international merchandise trade statistics, a country is defined as a geographical entity which trades, or has the potential to trade, with Australia in accordance with Australian Customs Service provisions. In Australian merchandise trade statistics, external territories under Australian administration are treated as separate countries while self-governing territories and dependent territories under the administration of other countries may be treated as individual countries.

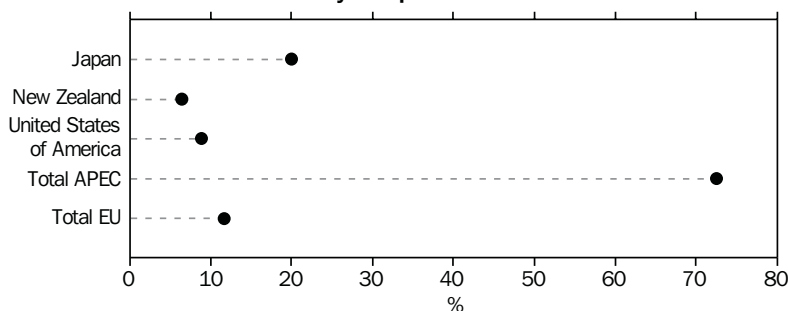
For exports, country refers to the country to which the goods were consigned at the time of export. For imports, country refers to the country of origin of the goods, which is defined as the country of production for Customs purposes. Where the country of consignment/origin is not known at the time of export/import, goods are recorded as Destination unknown (exports) or Origin unknown (imports).

Graphs 30.22 and 30.23 show respectively Australia's merchandise exports to and imports from selected countries and country groups in 1997–98. They show the importance of trade with the APEC group of countries. Table 30.24 shows merchandise trade for the last three financial years, classified by country and the two country groups APEC and the European Union.

The main contributors to the \$2,914m increase in the merchandise trade deficit for 1997–98 were:

- a \$1,947 (42%) fall in the surplus with the Republic of Korea as a result of a rise in imports of \$1,209m (mainly non-monetary gold and telecommunication equipment) and a fall in exports of \$738m (mainly non-monetary gold);
- a \$1,559m (108%) turnaround from surplus to deficit with Indonesia as a result of a rise of imports of \$1,005m (mainly non-monetary gold and miscellaneous manufactured articles) and a decrease in exports of \$554m (primarily live animals and non-ferrous metal); and
- a \$811m (131%) rise in the deficit with China as a result of a rise in imports of \$1,101m (chiefly articles of apparel and clothing accessories and miscellaneous manufactured articles) partly offset by a rise in exports of \$290m (mainly metalliferous ores and metal scrap).

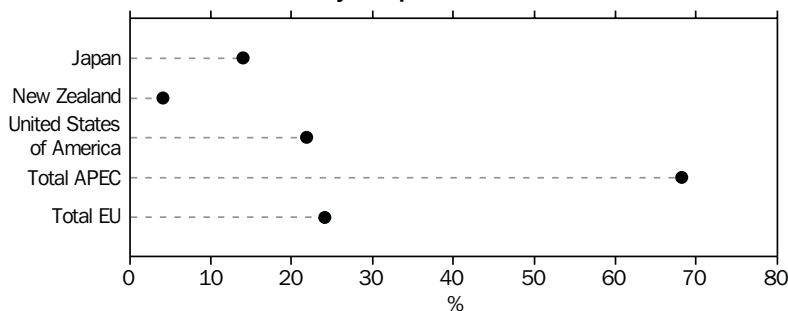
**30.22 AUSTRALIAN MERCHANDISE EXPORTS, Selected Countries and Country Groups—1997-98**



Note: Japan, New Zealand and the USA are part of the APEC country grouping.

Source: International Trade database, August 1998.

**30.23 AUSTRALIAN MERCHANDISE IMPORTS, Selected Countries and Country Groups—1997-98**



Note: Japan, New Zealand and the USA are part of the APEC country grouping.

Source: International Trade database, August 1998.

These contributions to the increase in the overall merchandise trade deficit were partly offset by:

- a \$902m (41%) rise in the surplus with Hong Kong as a result of rise in exports of \$1,033m (primarily non-monetary gold and telecommunication equipment) partly offset by an increase in imports of \$131m (mainly articles of apparel and clothing accessories and telecommunication equipment);
- a \$805 (122%) turnaround from deficit to surplus with Switzerland as a result of an increase in exports of \$860m (chiefly

non-monetary gold and transport equipment) partly offset by a rise in imports of \$55m (mainly photographic equipment and machinery specialised for particular industries); and

- a \$706m (523%) turnaround from deficit to surplus with United Arab Emirates as a result of a increase in exports of \$401m (including road vehicles and non-monetary gold) and a decrease in imports of \$305m (mainly petroleum).

## 30.24 MERCHANDISE EXPORTS AND IMPORTS, By Country

	1995-96		1996-97		1997-98	
	Exports	Imports	Exports	Imports	Exports	Imports
	\$m	\$m	\$m	\$m	\$m	\$m
Asia Pacific Economic Co-operation (APEC)						
Australia (Re-imports)	—	94	—	224	—	344
Brunei	77	—	59	—	52	5
Canada	1 267	1 557	1 178	1 265	1 282	1 450
Chile	156	122	174	89	178	81
China, People's Republic of	3 781	4 010	3 584	4 203	3 874	5 304
Hong Kong	3 052	970	3 105	900	4 138	1 031
Indonesia	2 716	1 522	3 305	1 864	2 751	2 869
Japan	16 429	10 816	15 377	10 241	17 583	12 663
Korea, Republic of	6 615	2 293	7 134	2 550	6 396	3 759
Malaysia	2 289	1 636	2 332	1 891	2 097	2 405
Mexico	99	169	122	176	216	270
New Zealand	5 609	3 591	6 214	3 685	5 662	3 723
Papua New Guinea	1 048	1 220	1 272	1 091	1 151	768
Philippines	1 075	260	1 226	282	1 165	418
Singapore	3 556	2 613	3 410	2 620	3 697	2 641
Taiwan	3 452	2 585	3 620	2 522	4 179	2 809
Thailand	1 779	1 005	1 693	1 201	1 390	1 475
United States of America	4 619	17 545	5 526	17 642	7 794	19 833
<i>Total</i>	57 617	52 008	59 330	52 447	63 604	61 849
European Union (EU)						
Austria	36	313	21	423	32	458
Belgium-Luxembourg	668	755	923	760	1 154	739
Denmark	117	336	100	383	205	399
Finland	335	684	303	606	295	686
France	727	1 867	799	1 980	864	2 030
Germany	1 152	4 862	1 058	4 558	1 236	5 209
Greece	34	78	39	95	61	91
Ireland	50	448	53	498	66	830
Italy	1 282	2 231	1 354	2 304	1 751	2 615
Netherlands	695	702	584	817	828	847
Portugal	48	94	32	106	31	121
Spain	292	519	328	458	514	652
Sweden	200	1 617	220	1 497	157	1 557
United Kingdom	2 829	4 882	2 357	5 182	3 039	5 595
<i>Total</i>	8 464	19 388	8 171	19 666	10 233	21 829
Other Countries						
Algeria	11	—	23	—	42	1
Angola	9	—	3	—	4	—
Argentina	110	72	116	101	108	79
Bahamas	1	3	1	1	3	6
Bahrain(a)	47	10	80	23	107	29
Bangladesh	172	28	263	39	251	51
Barbados	2	1	3	1	4	—
Bolivia	1	1	2	6	2	6
Brazil	389	447	333	351	408	363
Bulgaria	49	6	20	7	23	6
Cambodia	22	1	16	2	10	1
Cayman Islands	—	13	—	13	—	—
Christmas Island	22	2	17	4	15	7
Cocos (Keeling) Island	6	—	2	2	5	—
Colombia	37	17	59	21	29	21
Cook Islands	12	2	4	1	5	1
Costa Rica	1	6	2	7	2	9
Cote d'Ivoire	—	6	1	5	2	8
Croatia	12	8	6	7	10	8
Cuba	5	2	2	4	1	4

For footnotes see end of table.

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30.24 MERCHANDISE EXPORTS AND IMPORTS, By Country—*continued*

	1995-96		1996-97		1997-98	
	Exports	Imports	Exports	Imports	Exports	Imports
	\$m	\$m	\$m	\$m	\$m	\$m
Other countries— <i>continued</i>						
Cyprus	10	2	12	2	9	4
Czech Republic	24	47	30	52	60	50
Dominican Republic	—	1	1	1	7	2
Ecuador	15	2	21	2	19	2
Egypt(a)	343	9	519	11	342	14
Ethiopia	11	1	2	2	11	2
Fiji	479	235	524	264	526	305
French Polynesia	82	2	91	6	120	5
Ghana	27	4	59	7	63	6
Guam	15	—	18	—	16	—
Guatemala	1	3	1	3	11	5
Hungary	5	31	4	35	15	56
Iceland(a)	2	2	4	7	6	4
India	1 185	549	1 493	577	1 852	687
Iran	541	22	925	26	274	25
Iraq	14	—	143	—	318	16
Israel	102	300	105	290	121	387
Jamaica	3	1	9	1	13	1
Jordan	121	16	74	29	63	30
Kenya	29	14	53	13	37	18
Kiribati	20	—	23	1	20	—
Kuwait	148	95	160	120	178	92
Laos	15	—	8	—	2	—
Lebanon	16	5	30	5	33	6
Libya	9	—	42	—	124	—
Lithuania	4	—	7	1	6	1
Macau	9	10	13	6	8	9
Madagascar	3	1	4	1	2	1
Malawi	—	9	2	5	3	6
Maldives	4	—	3	—	4	—
Malta	8	6	9	6	13	6
Marianas, Northern	2	—	3	—	3	1
Marshall Islands	5	—	3	—	4	—
Mauritius	87	2	96	2	91	2
Micronesia, Federated States of	10	—	9	—	16	—
Morocco	4	15	49	12	35	19
Mozambique	7	—	15	—	22	—
Myanmar	13	7	15	9	26	13
Namibia	2	4	2	8	2	6
Nauru	25	14	21	11	27	10
Nepal	6	1	7	2	6	2
Netherlands Antilles	3	3	3	1	7	2
New Caledonia	191	46	220	43	183	41
Nigeria	9	58	13	58	17	—
Norfolk Island	12	—	22	—	14	—
Norway	101	137	141	180	147	206
Oman	112	4	123	64	196	19
Pakistan	259	132	304	144	467	173
Palau	1	—	6	—	2	—
Panama	2	2	2	1	7	1
Peru	25	28	36	19	64	14
Poland	39	31	72	29	38	90
Puerto Rico	7	259	7	275	8	122
Qatar	46	184	52	102	59	167
Romania	70	10	122	10	96	7
Russian Federation	86	26	101	24	223	17

For footnotes see end of table.

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**30.24 MERCHANDISE EXPORTS AND IMPORTS, By Country—continued**

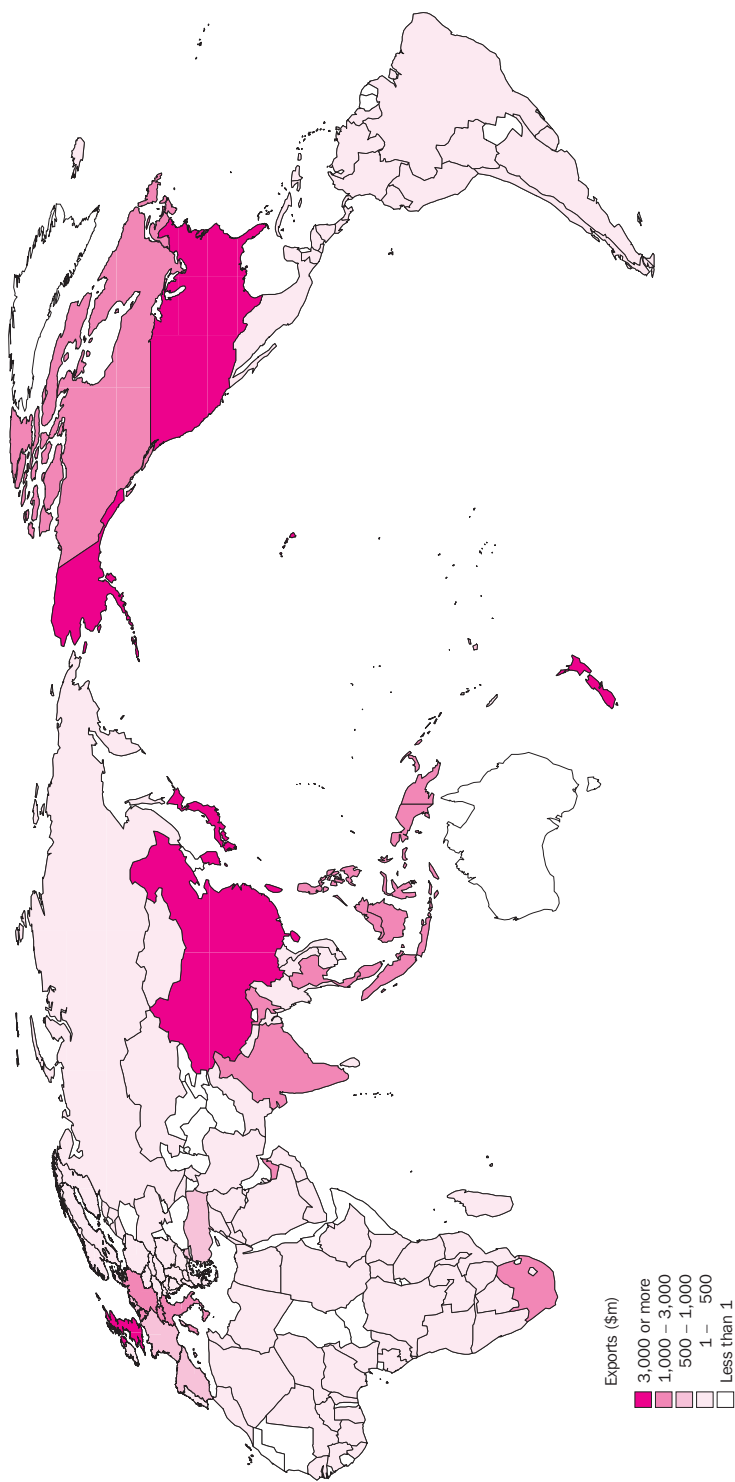
	1995–96		1996–97		1997–98	
	Exports	Imports	Exports	Imports	Exports	Imports
	\$m	\$m	\$m	\$m	\$m	\$m
Other countries—continued						
Samoa	36	59	41	67	35	56
Samoa (American)	28	3	18	4	18	6
Saudi Arabia	452	874	448	858	487	634
Seychelles	5	—	3	—	9	1
Slovak Republic	3	2	3	3	4	4
Slovenia	14	29	9	25	7	30
Solomon Islands	92	4	83	4	101	6
South Africa	776	433	1 014	424	1 096	582
Sri Lanka	196	53	199	58	179	74
Sudan	3	—	28	—	36	—
Switzerland	519	966	237	895	1 097	950
Syria	5	—	4	1	8	1
Tanzania	17	4	29	6	35	5
Tonga	16	1	14	1	19	1
Trinidad and Tobago	3	1	8	1	27	1
Tunisia	4	—	2	8	3	5
Turkey	366	73	384	74	637	112
Uganda	2	7	3	6	4	6
Ukraine	7	1	8	2	12	2
United Arab Emirates	542	475	665	800	1 066	495
United States Virgin Islands	—	9	—	8	8	6
Uruguay	5	5	10	5	9	3
Vanuatu	41	2	44	1	44	1
Venezuela	13	3	5	1	12	2
Viet Nam	198	329	211	433	324	664
Wallis & Futuna Islands	5	—	6	—	5	—
Yemen	78	—	91	—	144	—
Zimbabwe	31	15	33	17	48	18
Zone of Co-op A — Timor Gap	33	—	55	—	129	—
Other countries	117	47	57	74	148	28
Destination or Origin Unknown	1	46	1	47	—	57
International Waters	93	—	—	—	208	—
No Country Details(a)	290	—	320	—	317	—
Ships' Stores	656	—	612	—	581	—
Unidentified(b)	—	—	—	—	5	—
<i>Total</i>	9 924	6 396	11 431	6 885	13 929	7 002
<b>Total</b>	<b>76 005</b>	<b>77 792</b>	<b>78 932</b>	<b>78 998</b>	<b>87 766</b>	<b>90 680</b>

(a) Exports of alumina to Bahrain, Egypt and Iceland are excluded from country totals and included in the 'No country details' category. (b) Includes \$5m of exports for June 1998 which cannot yet be allocated by country.

Source: *International Trade database, August 1998.*

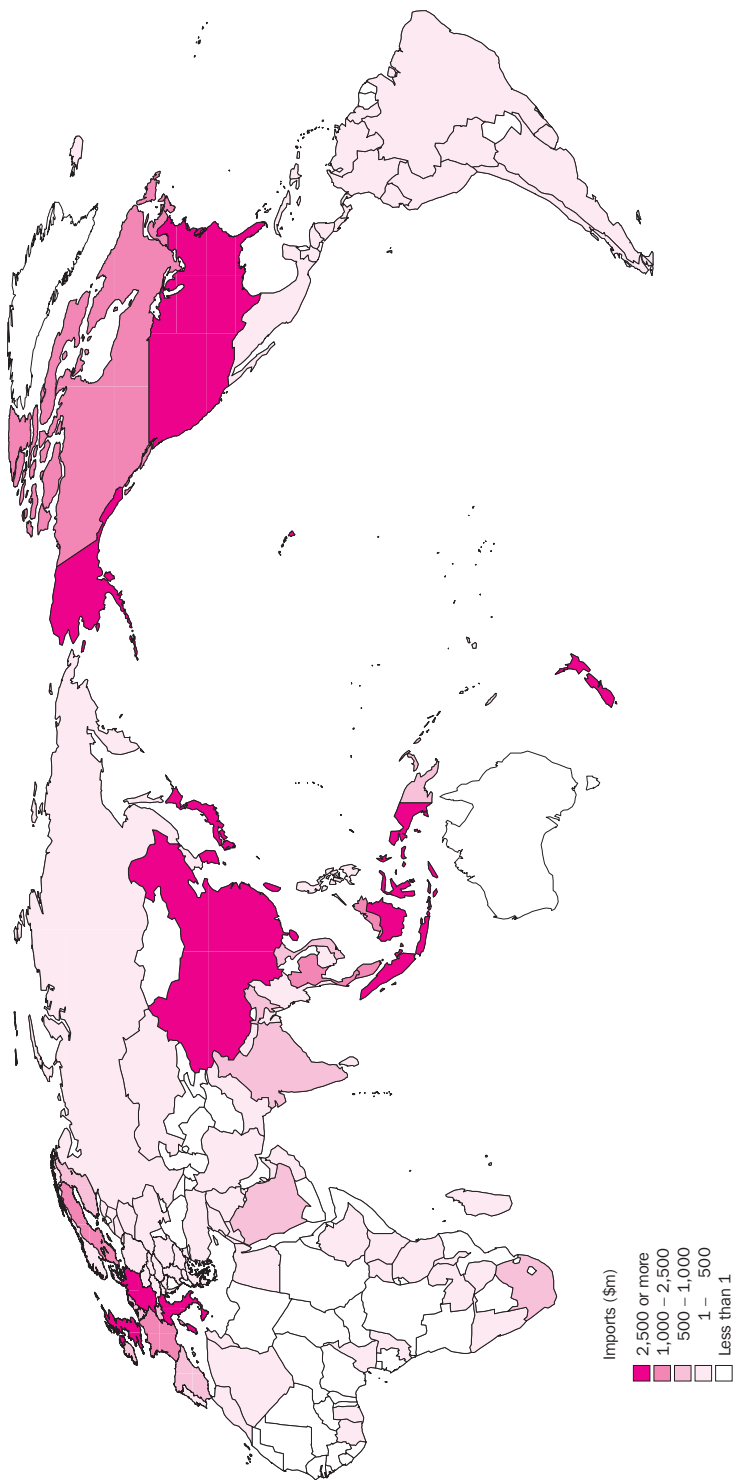
Maps 30.25, 30.26 and 30.27 show the main destination and source countries of Australia's exports and imports.

30.25 AUSTRALIA'S MERCHANDISE EXPORTS, Destinations—1997–98

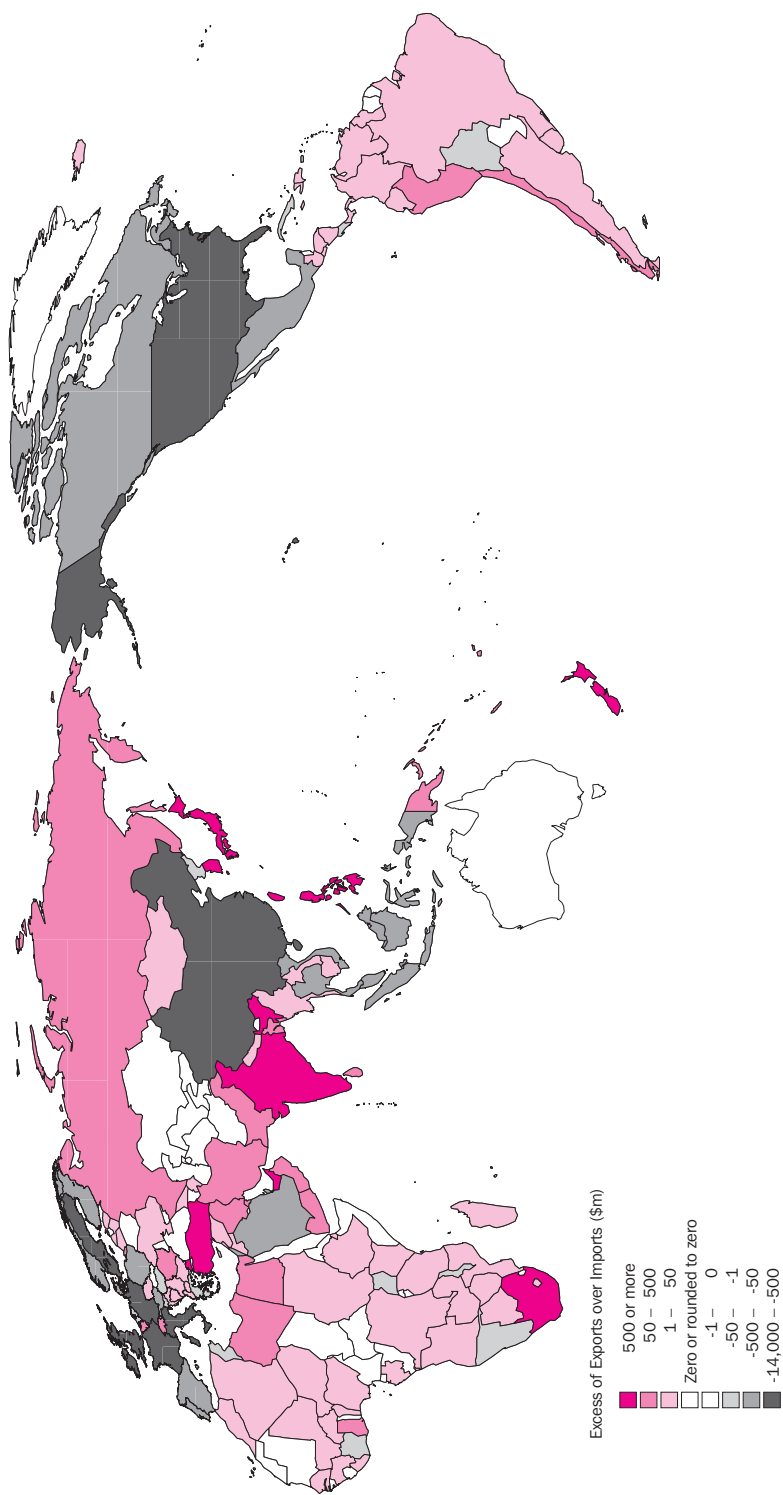




30.26 AUSTRALIA'S MERCHANDISE IMPORTS, Source Countries—1997–98



30.27 AUSTRALIA'S NET BALANCE OF TRADE, Partner Countries—1997-98



## Merchandise exports and imports by commodity

Commodity export and import statistics are presented according to the codes and descriptions of the third revision of the United Nations *Standard International Trade Classification* (SITC Rev. 3). This classification groups commodities according to the degree of processing they have undergone, from food and crude raw materials through to highly transformed manufactures.

Tables 30.28 and 30.29 show the value of major commodities exported and imported in 1997–98 and their percentage of the total value of Australian exports and imports.

Table 30.30 shows the value of all exports and imports, at broad commodity level, for 1995–96 to 1997–98.

For the year ended June 1998, exports were \$87,766m, up \$8,834m (11%) on the previous financial year. The most significant contributors to the rise were coal, coke and briquettes, up \$1,583m (20%) to \$9,588m; non-monetary gold, up \$1,546m (33%), to \$6,263m; metalliferous ores and metal scrap, up \$1,382m (15%) to \$10,433m; and non-ferrous metals, up \$941m (21%) to \$5,375m. The export commodities recording the biggest falls were cereals and cereal preparations, down \$860m (14%) to \$5,094m; general industrial machinery and equipment, down \$108m (9%) to \$1,086m; and road vehicles, down \$97m (5%) to \$1,729m.

Australia's major commodity exports for 1997–98 and their principal markets were:

- coal, \$9,558m—11% of total exports: Japan (44%), the Republic of Korea (12%), Taiwan (8%), and India (8%);
- non-monetary gold, \$6,263m—7% of total exports: the Republic of Korea (23%), Singapore (20%), Hong Kong (15%), and Switzerland (14%). This comprises gold

produced in Australia, and gold previously imported for refining or manufacturing;

- iron ore, \$3,791m—4% of total exports: Japan (44%), China (23%), and the Republic of Korea (13%); and
- wheat, \$3,627m—4% of total exports: principal market information is confidential.

For the year ended June 1998, imports were \$90,680m, up \$11,682m (15%) on the previous year. The most significant rises were recorded for: road vehicles, up \$2,722m (32%) to \$11,301m; non-monetary gold, up \$1,416m (240%) to \$2,006m, a large proportion of which came from Asia in semi-manufactured forms for refining or manufacturing and subsequent export; and office machines and automatic data processing machines, up \$972m (16%) to \$6,956m. Partly offsetting these rises were falls in imports of petroleum, petroleum products and related materials, down \$743m (15%) to \$4,312m, and transport equipment, down \$507m (21%) to \$1,936m.

Australia's major commodity imports for 1997–98 and their principal sources were:

- passenger motor vehicles, \$6,476m—7% of total imports: Japan (52%), the Republic of Korea (15%), Germany (13%) and the United States (6%);
- automatic data processing machines, \$4,346m—5% of total imports: the United States (25%), Singapore (19%), Japan (15%), and Taiwan (10%);
- petroleum oils and oils obtained from bituminous materials crude, \$3,319m—4% of total imports: Indonesia (31%), Viet Nam (14%), Papua New Guinea (14%), and United Arab Emirates (12%); and
- telecommunication equipment, parts and accessories (excluding television and radio receivers), \$2,743m—3% of total imports: the United States (21%), Japan (13%), Sweden (11%) and the Republic of Korea (10%).

## 30.28 MERCHANDISE EXPORTS OF MAJOR COMMODITIES—1997–98

Published major commodities	\$m	%
Aircraft and associated equipment; spacecraft including satellites) and spacecraft launch vehicles; and parts thereof	713	0.8
Alumina (aluminium oxide)	2 838	3.2
Aluminium	3 267	3.7
Barley, unmilled	545	0.6
Cars and other road vehicles (incl. air-cushion vehicles)	1 729	2.0
Cheese and curd	607	0.7
Coal, whether or not pulverised but not agglomerated	9 558	10.9
Copper ores and concentrates	820	0.9
Copper and copper alloys, unwrought (excl. master alloys)	374	0.4
Cotton (other than linters), not carded or combed	1 384	1.6
Crustaceans, molluscs and aquatic invertebrates (except canned or bottled)	825	0.9
Fruit and nuts, fresh, dried or preserved and fruit preparations (incl. fruit and vegetable juices)(a)	616	0.7
Gas, natural and manufactured	1 968	2.2
Gold, non-monetary (excl. gold ores and concentrates)	6 263	7.1
Hides and skins, bovine and equine, raw	228	0.3
Iron and steel	1 859	2.1
Iron ore concentrates and agglomerates (excl. roasted iron pyrites)	3 791	4.3
Lead and lead alloys, unwrought	352	0.4
Machinery specialised for particular industries	1 162	1.3
Meat of bovine animals fresh, chilled or frozen	2 700	3.1
Meat of sheep and goats fresh, chilled or frozen	677	0.8
Milk and cream and milk products other than butter or cheese	1 058	1.2
Nickel and nickel alloys, unwrought	419	0.5
Nickel oxide sinters	243	0.3
Office machines and automatic data processing machines	1 724	2.0
Ores and concentrates of molybdenum, niobium, titanium etc.(a)	588	0.7
Petroleum oils and oils obtained from bituminous minerals, crude	1 973	2.2
Petroleum products	1 873	2.1
Photographic and cinematographic supplies	463	0.5
Plastics in primary and non-primary forms(a)	439	0.5
Power generating machinery and equipment	977	1.1
Rice(a)	396	0.5
Sheep and goats, live	202	0.2
Skins, sheep and lamb, with wool on, raw	302	0.3
Sorghum, unmilled	50	0.1
Uranium and thorium ores and concentrates	288	0.3
Wheat (incl. spelt) and meslin, unmilled	3 627	4.1
Wood, in chips or particles	646	0.7
Wool, greasy (incl. fleece washed wool)	2 276	2.6
Wool, other, not carded or combed	790	0.9
Zinc and zinc alloys, unwrought	407	0.5
Zinc ores and concentrates	579	0.7
<i>Total major commodities(a)</i>	<i>61 596</i>	<i>70.2</i>
<b>Total exports</b>	<b>87 766</b>	<b>100.0</b>

(a) Excludes commodities subject to a 'No commodity details' restriction.

Source: *International Trade database, August 1998.*

## 30.29 MERCHANDISE IMPORTS OF MAJOR COMMODITIES—1997–98

Published major commodities	\$m	%
Aircraft and associated equipment; spacecraft (including satellites) and spacecraft launch vehicles; and parts thereof	1 516	1.7
Articles of apparel and clothing accessories	2 277	2.5
Automatic data processing machines and units thereof	4 346	4.8
Baby carriages, toys, games and sporting goods	1 068	1.2
Chemical materials and products, n.e.s.	1 135	1.3
Civil engineering and contractors' plant and equipment	1 226	1.4
Clay and refractory construction materials and mineral manufactures, n.e.s.	546	0.6
Electrical apparatus for switching or protecting electrical circuits	924	1.0
Electrical machinery and apparatus, n.e.s.	1 416	1.6
Fish, crustaceans, molluscs and aquatic invertebrates, and preparations thereof	691	0.8
Glass, glassware and pottery	514	0.6
Household-type electrical and non-electrical equipment, n.e.s.	893	1.0
Inorganic chemicals(a)	678	0.7
Internal combustion piston engines, and parts thereof, n.e.s.	1 005	1.1
Iron and steel	1 621	1.8
Machinery and equipment specialised for particular industries and parts thereof	1 086	1.2
Manufactures of base metals, n.e.s.	933	1.0
Measuring, checking, analysing and controlling instruments and apparatus, n.e.s.	1 524	1.7
Medical and pharmaceutical products	2 544	2.8
Motor vehicles for the transport of goods	2 035	2.2
Organic chemicals(a)	2 135	2.4
Paper, paperboard and articles of paper pulp, of paper or of paperboard(a)	1 991	2.2
Parts and accessories of motor vehicles and tractors, track-laying and wheeled	1 897	2.1
Parts and accessories for office and automatic data processing machines	2 234	2.5
Passenger motor vehicles (other than public transport type vehicles) incl. station wagons and racing cars	6 476	7.1
Petroleum oils and oils obtained from bituminous minerals, crude	3 319	3.7
Petroleum oils and oils obtained from bituminous minerals (other than crude)	761	0.8
Photographic and cinematographic supplies	606	0.7
Plastics in primary and non-primary forms(a)	1 813	2.0
Printed matter	969	1.1
Pumps, centrifuges, filtering or purifying apparatus and parts thereof	1 027	1.1
Rubber tyres, interchangeable tyre treads, tyre flaps and inner tubes for wheels of all kinds	792	0.9
Ships, boats (including hovercraft) and floating structures	372	0.4
Telecommunication equipment, n.e.s. and parts, n.e.s. and accessories	2 743	3.0
Television and radio broadcast receivers	880	1.0
Textile yarn	543	0.6
Tractors, track-laying and wheeled	547	0.6
Woven cotton fabrics or man-made textile material (excluding narrow or special fabrics)	730	0.8
<i>Total major commodities(a)</i>	<i>57 813</i>	<i>63.8</i>
<b>Total imports</b>	<b>90 680</b>	<b>100.0</b>

(a) Excludes commodities subject to a 'No commodity details' restriction.

Source: *International Trade database, August 1998.*

## 30.30 MERCHANDISE EXPORTS AND IMPORTS, By Commodity

Standard International Trade Classification	1995-96		1996-97		1997-98	
	Exports	Imports	Exports	Imports	Exports	Imports
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Food and live animals</b>						
Live animals other than fish, crustaceans, molluscs and aquatic invertebrates	660	94	706	103	627	125
Meat and meat preparations	3 296	46	2 958	67	3 730	63
Dairy products and birds' eggs	1 673	193	1 759	195	1 907	219
Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	1 114	601	1 087	604	1 177	691
Cereals and cereal preparations(a)	4 929	166	5 954	178	5 094	219
Vegetables and fruit(a)	1 008	590	1 147	588	1 132	623
Sugars, sugar preparations and honey	1 710	86	1 695	85	(a)1 340	95
Coffee, tea, cocoa, spices, and manufactures thereof	193	504	191	502	183	651
Feeding stuff for animals (excl. unmilled cereals)(a)	458	94	531	122	540	150
Miscellaneous edible products and preparations	231	520	283	542	304	626
Total(a)	15 272	2 894	16 311	2 985	16 034	3 460
<b>Beverages and tobacco</b>						
Beverages	605	339	714	351	994	428
Tobacco and tobacco manufactures	43	165	67	152	65	146
Total	648	503	782	502	1 059	574
<b>Crude materials, inedible, except fuels</b>						
Hides, skins and furskins, raw	504	2	505	2	572	2
Oil seeds and oleaginous fruits	206	98	200	95	374	81
Crude rubber (incl. synthetic and reclaimed)	11	155	10	136	8	123
Cork and wood	624	421	618	430	719	479
Pulp and waste paper	27	191	13	136	18	137
Textile fibres and their wastes (not manufactured into yarn or fabric)	4 065	175	4 619	151	5 102	145
Crude fertilisers and crude minerals (excl. coal, petroleum and precious stones)(b)	426	150	378	139	(a)417	175
Metalliferous ores and metal scrap(a)(c)	8 666	178	9 051	174	10 433	205
Crude animal and vegetable materials, n.e.s.	223	206	220	223	241	256
Total(a)(b)(c)	14 752	1 576	15 615	1 487	17 884	1 605
<b>Mineral fuels, lubricants and related materials</b>						
Coal, coke and briquettes	7 840	18	8 005	11	9 588	24
Petroleum, petroleum products and related materials(b)	3 188	4 234	3 805	5 055	3 846	4 312
Gas, natural and manufactured	1 562	59	1 895	97	1 968	75
Total(b)	12 591	4 312	13 705	5 164	15 402	4 412
<b>Animal and vegetable oils, fats and waxes</b>						
Animal oils and fats	197	5	184	8	(a)230	7
Fixed vegetable fats and oils, crude, refined or fractionated(a)	11	241	10	235	55	229
Fats and oils (processed), waxes and inedible mixtures or preparations, of animal or vegetable origin, n.e.s.	29	23	38	23	48	22
Total(a)	238	268	232	266	333	258
<b>Chemical and related products, n.e.s.</b>						
Organic chemicals(d)	87	1 919	116	2 040	137	2 135
Inorganic chemicals(a)(b)	365	832	317	700	330	678
Dyeing, tanning and colouring materials	435	385	407	408	497	453
Medicinal and pharmaceutical products(a)	894	1 830	979	1 998	1 143	2 544
Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	300	609	296	636	290	750
Fertilisers (excl. crude)(a)	26	669	24	703	19	768
Plastics in primary forms(a)(b)	326	925	297	855	277	1 005
Plastics in non-primary forms	159	757	154	721	161	808
Chemical materials and products, n.e.s.	423	975	455	968	442	1 135
Total(a)(b)(d)	3 015	8 901	3 045	9 028	3 298	10 277

For footnotes see end of table.

...continued

**30.30 MERCHANDISE EXPORTS AND IMPORTS, By Commodity—continued**

Standard International Trade Classification	1995–96		1996–97		1997–98	
	Exports	Imports	Exports	Imports	Exports	Imports
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Manufactured goods classified chiefly by material</b>						
Leather, leather manufactures, & dressed furskins, n.e.s.	463	164	470	162	517	145
Rubber manufactures, n.e.s.(b)	157	1 125	150	1 115	166	1 252
Cork and wood manufactures (excl. furniture)(a)	104	317	103	333	113	408
Paper, paperboard, and articles of paper pulp, of paper or of paperboard	296	(b)1 942	(a)394	1 769	431	1 991
Textile yarn, fabrics, made-up articles, n.e.s., and related products	553	2 359	583	2 284	613	2 522
Non-metallic mineral manufactures, n.e.s.(a)	746	1 188	716	1 244	791	1 462
Iron and steel	1 757	1 410	1 623	1 295	1 859	1 621
Non-ferrous metals(b)	5 043	645	4 434	619	5 375	802
Manufactures of metals, n.e.s.(b)	725	1 890	785	1 902	731	2 331
<i>Total(a)(b)</i>	<i>9 844</i>	<i>11 039</i>	<i>9 257</i>	<i>10 724</i>	<i>10 595</i>	<i>12 533</i>
<b>Machinery and transport equipment</b>						
Power generating machinery and equipment	826	1 998	914	1 895	977	2 054
Machinery specialised for particular industries	1 078	3 924	1 160	4 043	1 162	4 245
Metal working machinery	163	492	207	608	210	580
General industrial machinery and equipment, n.e.s. and machine parts, n.e.s.	1 143	4 470	1 194	4 649	(a)1 086	5 440
Office machines & automatic data processing machines	1 903	6 033	1 627	5 984	1 724	6 956
Telecommunications and sound recording and reproducing apparatus and equipment	719	3 759	631	3 669	1 058	3 986
Electrical machinery, apparatus, appliances, parts (incl. non-electrical counterparts of electrical domestic equipment)(b)	1 394	5 316	1 297	4 912	1 295	5 428
Road vehicles (incl. air-cushion vehicles)	1 199	7 980	1 826	8 579	1 729	11 301
Transport equipment (excl. road vehicles)	1 295	2 487	1 811	2 443	1 830	1 936
<i>Total(b)</i>	<i>9 720</i>	<i>36 458</i>	<i>10 666</i>	<i>36 782</i>	<i>(a)11 071</i>	<i>41 926</i>
<b>Miscellaneous manufactured articles</b>						
Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	76	221	85	(b)234	89	287
Furniture, parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	97	464	97	532	100	678
Travel goods, handbags and similar containers	14	362	15	339	13	357
Articles of apparel and clothing accessories	320	1 766	356	1 841	372	2 277
Footwear	66	574	65	623	55	708
Professional, scientific and controlling instruments and apparatus, n.e.s.	543	1 911	630	1 944	830	2 294
Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks(b)	562	1 258	580	1 252	654	1 378
Miscellaneous manufactured articles, n.e.s.	1 039	4 479	1 017	4 585	1 104	5 480
<i>Total(b)</i>	<i>2 718</i>	<i>11 035</i>	<i>2 844</i>	<i>11 349</i>	<i>3 217</i>	<i>13 458</i>
<b>Commodities and transactions not classified elsewhere in the SITC</b>						
Special transactions and commodities not classified according to kind	459	28	517	32	528	42
Gold coin whether or not legal tender, and other coin being legal tender	145	5	116	9	137	9
Coin (excl. gold coin), not being legal tender	0	—	1	1	2	0
Gold, non-monetary (excl. gold ores and concentrates)	5 545	708	4 717	590	6 263	2 006
Combined confidential items of trade(e)	1 058	62	1 125	80	1 942	120
<i>Total(e)</i>	<i>7 208</i>	<i>804</i>	<i>6 476</i>	<i>712</i>	<i>8 872</i>	<i>2 178</i>
<b>Total merchandise exports and imports(a)(b)(c)(d)(e)</b>	<b>76 005</b>	<b>77 792</b>	<b>78 932</b>	<b>78 998</b>	<b>87 766</b>	<b>90 680</b>

(a) Excludes export commodities subject to a 'No commodities details' restriction. (b) Excludes import commodities subject to a 'No commodities details' restriction. (c) Includes export commodities subject to a 'Broad commodities details' restriction. (d) Includes import commodities subject to a 'Broad commodity details' restriction. (e) Includes commodities subject to a 'No commodity details' restriction.

Source: *International Trade database, August 1998.*

## Merchandise exports and imports by industry of origin

Table 30.31 classifies merchandise trade statistics according to divisions and selected subdivisions of the *Australian and New Zealand Standard*

*Industrial Classification* (ANZSIC). The statistics are compiled by allocating international trade data for a commodity to an ANZSIC industry of origin category based upon the industry with which that commodity is primarily associated.

**30.31 MERCHANDISE EXPORTS AND IMPORTS, By Industry of Origin**

	1995-96		1996-97		1997-98	
	Exports	Imports	Exports	Imports	Exports	Imports
ANZSIC	\$m	\$m	\$m	\$m	\$m	\$m
Agriculture, forestry and fishing						
Agriculture	7 690	717	8 991	650	8 223	746
Services to agriculture; hunting and trapping	821	9	1 147	10	1 465	11
Forestry and logging	45	6	60	6	47	7
Commercial fishing	579	65	578	75	657	87
Total	9 135	796	10 776	741	10 392	851
Mining						
Coal mining	7 783	12	7 964	10	9 561	15
Oil and gas extraction	3 109	2 907	3 771	3 931	3 941	3 394
Metal ore mining	5 334	129	5 988	132	7 743	150
Other mining	251	150	214	137	209	164
Total	16 476	3 198	17 937	4 210	21 454	3 723
Manufacturing						
Food, beverage and tobacco manufacturing	10 971	3 263	11 030	3 394	12 198	3 833
Textile, clothing, footwear and leather manufacturing	2 723	5 280	2 832	5 289	2 995	6 039
Wood and paper product manufacturing	989	2 696	1 050	2 494	1 213	2 835
Printing, publishing and recorded media	415	1 627	411	1 594	467	1 892
Petroleum, coal, chemical and associated product manufacturing	5 148	12 507	5 381	12 470	5 651	13 776
Non-metallic mineral product manufacturing	392	1 011	378	1 018	361	1 159
Metal product manufacturing	16 442	5 072	14 656	4 914	16 953	7 303
Machinery and equipment manufacturing	10 967	40 144	12 046	40 421	12 746	46 119
Other manufacturing	741	1 945	710	2 153	766	2 781
Total	48 787	73 545	48 494	73 747	53 351	85 737
Other industries(a)	1 607	252	1 725	301	2 569	369
<b>Total</b>	<b>76 005</b>	<b>77 792</b>	<b>78 932</b>	<b>78 998</b>	<b>87 766</b>	<b>90 680</b>

(a) Includes commodities subject to a 'No commodity details' restriction.

Source: *International Trade database*, August 1998.



## Import Price Index

The Import Price Index measures changes in prices of imports of merchandise into Australia on a free-on-board, country of origin basis.

The current Import Price Index is a fixed weight index compiled on a reference base of 1989–90 = 100, with the weights based predominantly on Australian imports for 1988–89 and 1989–90.

Prices of individual shipments are obtained from major importers of the selected items.

Index items have been grouped according to four different classifications: the *Standard International Trade Classification Revision 3*; an industry of origin basis defined in terms of the *Australian and New Zealand Standard Industrial Classification* (ANZSIC); the United Nations *Classification by Broad Economic Categories* (BEC); and the *Combined Australian Customs Tariff and Statistical Nomenclature*.

Tables 30.32 to 30.34 show index numbers in respect of the first three of these classifications, and for end use classes (capital, intermediate and consumption goods).

**30.32 IMPORT PRICE INDEX, Index Numbers Based on the SITC(a)**

SITC	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Food and live animals chiefly for food	104.7	106.8	116.6	115.9	112.8	129.0
Beverages and tobacco	121.8	111.5	106.6	109.8	114.3	126.0
Crude materials, inedible, except fuels	101.1	116.3	121.9	125.8	110.2	119.1
Mineral fuels, lubricants and other related materials	100.1	93.5	90.1	89.8	98.1	93.4
Animal and vegetable oils, fats and waxes	126.6	120.9	140.4	170.1	158.8	156.4
Chemicals and related products n.e.s.	106.2	103.3	108.8	115.1	107.5	112.9
Manufactured goods classified chiefly by material	109.3	112.1	110.4	115.7	109.6	116.7
Machinery and transport equipment	116.8	123.1	121.1	117.4	108.5	115.5
Miscellaneous manufactured articles	114.9	117.0	113.4	114.2	111.2	120.3
Commodities and transactions n.e.c.	98.7	110.4	104.4	103.7	93.6	90.5
<b>All groups</b>	<b>112.1</b>	<b>115.6</b>	<b>114.8</b>	<b>115.0</b>	<b>108.6</b>	<b>115.4</b>

(a) Reference base year 1989–90 = 100.0.

Source: *Import Price Index, Australia* (6414.0).

**30.33 IMPORT PRICE INDEX, Industry of Origin Index Numbers Based on ANZSIC(a)**

ANZSIC Division	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Agriculture, forestry and fishing	102.6	107.3	141.7	136.3	128.0	154.9
Mining	113.7	97.8	102.5	104.5	115.6	110.0
Manufacturing	111.7	115.5	113.8	113.5	106.8	113.5

(a) Reference base year 1989–90 = 100.0.

Source: *Import Price Index, Australia* (6414.0).

**30.34 IMPORT PRICE INDEX, Index Numbers for BEC and End Use Classes(a)**

Categories/classes	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Broad economic categories						
Food and beverages	108.0	107.8	119.5	119.8	116.0	132.6
Industrial supplies n.e.s.	104.1	105.0	106.6	113.4	105.8	112.8
Fuels and lubricants	103.2	95.4	93.0	90.7	99.0	90.2
Capital goods and parts and accessories thereof	110.9	114.0	110.0	104.0	95.0	100.7
Transport equipment and parts and accessories thereof	124.6	135.9	136.8	135.1	126.9	135.1
Consumer goods n.e.s.	114.6	117.7	114.0	114.1	110.1	118.4
End use classes						
Capital goods	117.0	122.8	119.8	116.0	107.7	113.7
Intermediate goods	105.1	106.6	107.6	109.2	102.5	109.1
Consumption goods	116.9	121.1	119.2	119.6	115.2	123.2

(a) Reference base year 1989–90 = 100.0.

Source: *Import Price Index, Australia* (6414.0).

## Export Price Index

The Export Price Index measures changes in the prices of exports of merchandise from Australia, including re-exports (i.e. goods which are imported into Australia and exported at a later date without physical alteration).

The current Export Price Index is a fixed weight index compiled on a reference base of 1989–90 = 100.0, with the weights based predominantly on Australian exports for 1988–89.

In general, prices are obtained from major exporters of the selected commodities included in the index.

The commodities included in the current index have been combined into broad index groups in three ways: in terms of the *Australian Harmonised Export Commodity Classification* (AHECC); on an industry of origin basis defined in terms of the *Australian and New Zealand Standard Industrial Classification* (ANZSIC); and for selected sections of the *Standard International Trade Classification Revision 3* (SITC Rev. 3).

Tables 30.39 and 30.40 show index numbers in respect of the first two of these classifications.

**30.35 EXPORT PRICE INDEX, Index Numbers Based on AHECC(a)**

AHECC	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Live animals, animal products	105.1	110.3	105.9	98.8	92.7	100.0
Vegetable products	94.3	88.6	82.7	101.1	98.1	96.3
Prepared foodstuffs	94.9	102.3	104.6	101.3	99.8	109.7
Mineral products	108.2	100.9	95.1	100.9	103.0	113.7
Products of chemical or allied industries	90.1	87.5	84.4	89.5	86.9	94.9
Wool and cotton fibres	60.9	59.0	80.8	72.7	67.6	75.8
Gold, diamonds and coin	99.6	110.4	104.0	102.3	92.1	89.8
Base metals and articles of base metals	81.0	76.3	96.8	97.0	86.1	94.1
Machinery and mechanical appliances	98.2	97.5	97.2	95.8	88.5	89.1
Motor vehicles, aircraft and vessels	105.0	109.3	108.2	107.3	103.6	110.0
<b>All groups</b>	<b>93.5</b>	<b>91.8</b>	<b>94.7</b>	<b>96.1</b>	<b>92.4</b>	<b>98.9</b>

(a) Reference base year 1989–90 = 100.0.

Source: *Export Price Index, Australia* (6405.0).

**30.36 EXPORT PRICE INDEX, Industry of Origin, Index Numbers Based on ANZSIC(a)**

ANZSIC Division	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
Agriculture, forestry, fishing	74.6	72.2	83.4	85.1	80.6	84.8
Mining	108.0	101.0	94.2	100.0	101.3	112.7
Manufacturing	94.1	95.2	98.6	98.0	92.5	97.7

(a) Reference base year 1989–90 = 100.0.

Source: *Export Price Index, Australia* (6405.0).

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# Developments in Australian exports—a longer term perspective

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## Introduction

Exporting activity has long been a significant element in the Australian economy. Foreign markets for Australian goods and services provide opportunities to increase national turnover, achieve economies of scale, diversify production and contribute to growth and employment. This article takes a longer-term perspective on some of the developments in Australia's exports, looking at the contribution to production, and noting the changing balance in both the commodities traded and the markets in which those commodities are bought.

## Main findings

Over the past decade or so, Australia's exports of goods and services have been growing strongly, increasing their share of domestic production in both nominal and real terms. But the growth has not been even. Manufactured exports and services exports have both been rising faster than the rural and resource commodity exports. These changes continue a longer term pattern of increasing sophistication in the nature of Australia's exported goods and services, although the rural and resource commodities still accounted for more than half of all exports in 1997–98.

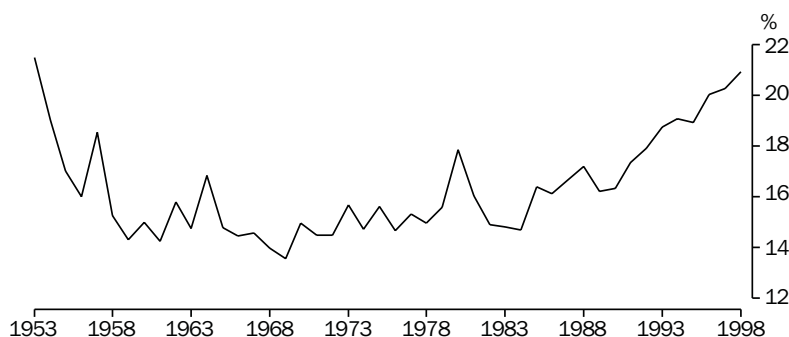
The destinations for Australia's exports have also changed. While exports once went primarily to our European customers, in 1997–98 three-quarters of our exports went to partner economies in the Asia Pacific Economic Cooperation (APEC) group.

## The exports share of domestic production

The exports share of Australia's gross domestic product has been generally rising over the past decade, after 30 years of relative stability. In the late 1940s and early 1950s, the exports share of GDP (at current prices) was running at about 20%. It generally fell to about 15% in the late 1950s, remaining there until the mid 1980s. Since then the share has been rising, reaching 21% in 1997–98.

Most industrial countries have higher exports shares than Australia; only the United States (at about 12%), Japan (11%) and Greece (15%) have lower exports to GDP ratios than Australia. However, only five industrial countries (the United States, Canada, Finland, Spain and Sweden) have experienced growth in their exports share comparable to that achieved by Australia over the past 10 to 15 years.

Graph S7.1 shows the ratio of Australia's exports to the income-based measure of GDP (GDP(I)) over the 50 years to 1997–98. Some of the reasons for the growing exports share in recent years relate to the changing composition of exports, which is discussed below.

**S7.1 RATIO OF EXPORTS TO GDP(I)**

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*;  
*Australian National Accounts: National Income, Expenditure and Product (5206.0)*.

### Changing composition of exports—exported commodities

Over the ten years to 1997–98, Australia's GDP(I) increased at an annual average rate of about 6.5%, while exports increased at a faster rate (8% per annum), raising the exports share in production. However, the contributions to the rise by the different broad commodity groupings within exports varied, as table S7.2 shows.

**S7.2 RISING EXPORTS—1987–88 to 1997–98**

	Average annual increase (compound)	Exports levels 1997–98
	%	\$b
Goods and services	8	114
Goods	8	88
Rural goods(a)	5	23
Manufactures	14	21
Non-rural resource commodities	9	42
Services	10	26

(a) The exports levels have been adjusted approximately for confidential sugar exports to allow inter-temporal comparisons.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

Services exports have been rising at a compound rate of 10% per annum over the past decade, faster than the rise in goods exports, and increasing the services share in total exports from 19% in 1987–88 to 22% in 1997–98. At one end of the spectrum, travel (which accounted for nearly half of all services exports in 1997–98)

grew at 12% per annum over this period, with education-related travel rising at a compound rate of 21% per annum. At the other end of the spectrum, transportation services (accounting for a quarter of services exports) rose at 6% per annum. The remaining other business and personal services, in aggregate, climbed at an annual rate of 12%. Over the past five years, many of the smaller business and personal services commodities have achieved rises at or above that for travel services. Exports of business services in insurance, finance, computing and information, trade related commissions and margins, legal and advertising have all risen faster than travel exports, as have personal and cultural services exports. Table 30.8 in the chapter shows exports under the main services exports categories for the past six years.

Manufactured goods exports (comprising machinery, transport equipment, and other manufactures) outperformed the rise in services exports, rising at an average rate of 14% per annum over the ten year period, but they came off a lower base and still contributed less than services to the total exports effort.

Rural goods now account for about as much as manufactures in total exports returns, and have shown the slowest rate of increase (5%) over the period since 1987–88. In the early 1960s, rural exports accounted for about two-thirds of Australia's exports, but by 1969–70 that share had fallen to a little over 40%, and fell further during the 1970s and early 1980s. The rural goods share in exports has continued to decline, from just over 30% 15 years ago to be under 20% by 1997–98.

Non-rural resource commodities, now the largest of the broad export groupings, have risen at an annual rate of 9% over the past ten years. Gold has increased in line with the overall rise in this group in the last ten years. Gold exports have been affected in the past two years by both Reserve Bank of Australia gold sales (\$2.4b over 1996–97 and 1997–98) and the more recent increased import of gold, and its subsequent export after reprocessing, which followed the instability in Asian financial markets that commenced in late 1997. However, the average annual rate of increase in the past two years is not significantly different from that achieved in the previous eight years. Exports of gold had grown much more quickly in the early 1980s. Gold exports in 1987–88 were ten times the level exported five years earlier.

Goods exports by broad commodity, in current and constant price terms, are shown for the last six years in table 30.5 of the chapter.

In constant price terms (1989–90 base year), exports have also increased their share of GDP over the past decade, from 16% in 1987–88 to 24% in 1997–98.

One measure of price change in exports that can be used is the change in the implicit price deflator (IPD) observed for exports (that is, the ratio of current price exports to constant price exports, with the latter expressed in terms of 1989–90 prices). The broad level IPDs for goods and services are shown, for the past six years, in table 30.7. However, the IPD is not a pure price measure and reflects a combination of both price change and the changing composition of exports. Across the various exports commodities, the IPDs have behaved quite differently, in part reflecting differing price movements, but also the changing significance of the different components that make up the commodity aggregates. The IPD for total exports has risen by 10% in the past decade, with the goods IPD up 6% and the services IPD up 23%. At a more detailed level, however, the IPDs have varied quite markedly, from rises of over 60% for cereals to falls of nearly 40% for machinery exports.

On a fixed weight basis (excluding compositional change to leave only price effects) exports prices rose a little faster than implied by the IPDs, in total increasing by 12% over the past decade, with an 8% increase for goods and a 26% increase for services.

## Changing composition of exports—Australia's exports markets

As well as quite significant changes over the years in the goods and services that Australia exports, the destinations to which we export have also been changing. During the 1930s, Australia's export trade was dominated by the then traditional trading partners from Europe, especially the United Kingdom, France and Germany. These countries took almost 60% of Australian exports. The importance of these countries has declined since then, and by 1996–97 they accounted for only 7% of Australia's total exports of goods and services. Countries in the Asia–Pacific region, on the other hand, had been relatively less important trading partners for Australia in the 1930s. For example, the United States took less than 4% of Australia's exports in the 1930s, while Japan took about 10%.

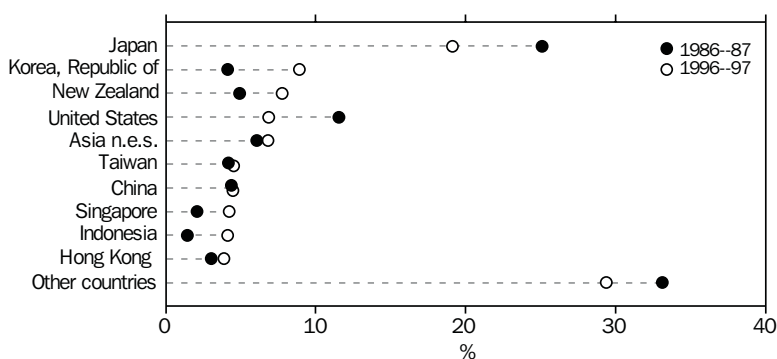
By 1996–97, Japan was taking \$19b (18%) of Australia's exports, and is Australia's largest market for both its goods and its services exports. Japan's share of exports has slipped back from its peak of 25% in 1991–92.

The United States took \$9b (8%) of Australia's exports of goods and services in 1996–97, and was our second largest export destination, followed closely by Korea at \$8b (8%). Goods exports to Korea overtook our exports to the United States in 1994–95 and kept in front for the next two years. However, the rapid falloff in exports to Korea in the second half of 1997–98, following the financial instability in the Asian region in late 1997, and some one-off effects that boosted gold exports to the United States in the second half of 1997–98, have pushed the United States ahead of Korea into second place as an export destination for our goods.

Graph S7.3 shows the changes over the decade to 1996–97 in the shares of Australia's goods exports taken by our major trading partners.

In services, the United States is still Australia's second largest market, close behind Japan and well ahead of Korea, although the gap is narrowing. Services exports to the United States were \$3.2b in 1996–97, two and a half times the level of a decade earlier, while services exports to Korea had increased to \$1.1b, more than 15 times the level in 1986–87.

## S7.3 CHANGES IN AUSTRALIA'S MAJOR EXPORT DESTINATIONS FOR GOODS



Source: Balance of Payments and International Investment Position, Australia (5363.0).

Table S7.4 presents Australia's exports of goods and services to its major export destinations, and selected groupings of countries, for the ten years to 1996-97. More country detail on the services

trade is provided in table 30.9, while merchandise goods exports by detailed country are shown in table 30.24.

## S7.4 AUSTRALIA'S EXPORTS OF GOODS AND SERVICES TO SELECTED MAJOR TRADING PARTNERS AND COUNTRY GROUPS

	1986-87	1987-88	1988-89	1989-90	1990-91
	\$m	\$m	\$m	\$m	\$m
<b>COUNTRIES</b>					
China, People's Republic of	1 671	1 359	1 492	1 492	1 617
Germany	1 374	1 409	1 479	1 422	1 423
Hong Kong	1 328	2 301	2 225	1 787	2 086
Indonesia	715	795	1 003	1 326	1 856
Japan	10 073	12 217	13 745	14 680	16 658
Korea, Republic of	1 579	1 891	2 326	2 847	3 435
Malaysia	887	996	1 094	1 305	1 432
New Zealand	2 653	3 337	3 494	3 830	3 825
Singapore	1 000	1 395	1 756	2 369	3 249
Taiwan	1 601	1 737	1 707	1 991	2 165
Thailand	321	445	607	754	870
United Kingdom	2 421	2 997	3 026	3 304	3 503
United States of America	5 437	6 354	6 182	7 100	8 190
All other countries	13 219	14 474	15 182	16 632	15 881
<b>Total all countries</b>	<b>44 279</b>	<b>51 707</b>	<b>55 318</b>	<b>60 839</b>	<b>66 190</b>
<b>COUNTRY GROUPS(a)</b>					
APEC	23 812	28 684	31 663	35 755	41 183
ASEAN	3 319	4 040	5 019	6 434	8 043
EU	7 236	8 453	8 597	8 908	9 074
OECD	27 056	32 217	33 979	36 887	40 860

...continued

**S7.4 AUSTRALIA'S EXPORTS OF GOODS AND SERVICES TO SELECTED MAJOR TRADING PARTNERS  
AND COUNTRY GROUPS—continued**

	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97
	\$m	\$m	\$m	\$m	\$m	\$m
<b>COUNTRIES</b>						
China, People's Republic of	1 659	2 540	2 930	3 365	4 189	3 989
Germany	1 561	1 501	1 619	1 709	1 762	1 694
Hong Kong	2 714	3 346	3 679	3 505	4 136	4 312
Indonesia	2 006	2 228	2 550	2 969	3 629	4 370
Japan	17 434	18 302	19 182	19 837	20 219	19 143
Korea, Republic of	3 626	4 367	5 281	6 130	7 783	8 285
Malaysia	1 606	1 794	2 400	2 734	3 077	3 156
New Zealand	3 994	4 544	5 213	6 080	7 066	7 801
Singapore	3 770	4 489	4 068	4 879	4 791	4 799
Taiwan	2 803	3 151	3 338	3 806	4 182	4 231
Thailand	1 050	1 494	1 671	2 076	2 316	2 200
United Kingdom	3 815	4 187	4 749	4 212	4 903	4 618
United States of America	7 259	7 104	7 497	7 074	7 645	8 767
All other countries	16 696	17 757	18 725	19 133	23 306	27 953
<b>Total all countries</b>	<b>69 993</b>	<b>76 804</b>	<b>82 902</b>	<b>87 509</b>	<b>99 004</b>	<b>105 318</b>
<b>COUNTRY GROUPS(a)</b>						
APEC	49 683	55 539	61 625	66 411	73 513	75 913
ASEAN	9 135	10 825	11 690	13 787	15 446	16 312
EU	9 937	10 183	10 835	11 072	12 389	12 350
OECD	41 259	42 944	45 501	46 869	50 504	59 220

(a) For composition of country groups, see footnotes to table 30.9.

Source: *Information Paper: Upgraded Balance of Payments and International Investment Position Statistics, Australia* (5365.0).

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